THE

AMERICAN JOURNAL OF PHARMACY.

JANUARY, 1868.

ECONOMY IN THE USE OF ALCOHOL IN PERCOLATION.

On the preparation and use of Resin of Podophyllum.

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The following paper is an addition to the series published during the past few years, as researches upon the process of percolation as applicable to practical pharmacy, and with especial reference to economy in the use of alcohol; and it adds one more typical drug to those which have been specially and individually investigated in this direction.

The officinal (U. S. P.) formula for Resin of Podophyllum* is

* It seems unfortunate that those whose aim should be to give accuracy and precision to matters connected with medical science and art should so commonly refuse to this substance its proper and correct name, and adhere to the inaccurate and otherwise objectionable name of Podophillin, and this latter name is particularly objectionable and vulgar when pronounced with the accent on the final syllable. Beside, this name and its peculiar pronunciation belong where they originated, namely, to a substance of an almost proprietary character as made, sold and used by the sect of so-called "Eclectics," by processes not publicly known, and probably differing in the hands of different makers. Those accustomed to, and desiring to use this article are quite right in adhering to its name and the pronunciation of it, but those who would use the officinal substance had better use the officinal title. The termination *in* has long been applied to certain proximate principles of a neuter character and

objectionable,—first, because the use of muriatic acid in the precipitation is omitted; second, because a great excess of alcohol is directed; and third, because details which are of primary importance to the production of a good medicinal preparation are wanting.*

The later officinal process of the new British Pharmacopœia is perhaps even more objectionable; first, from the excessive use of hydrochloric acid; second, from the use of coarse powder; third, from the excessive use of rectified spirit; fourth, from directing the product to be dried in a stove; and fifth, from a want of definite detail, and a peculiar involved and inverted style, which requires analysis in order to be understood, and is then neither definite nor clear.

These criticisms upon the only two officinal formulas for this substance were based upon a general experience in its preparation on the large scale, and in order to give them force and applicability on the scale of the Pharmacopœias, a number of experiments were carefully made, the most important results of which may be summed up as follows:

The first series proved that a given lot of about 200 pounds of the root contained accurately 4·1 per cent. of the resin, when carefully and thoroughly exhausted.

The second series proved that exhaustion was always difficult and generally imperfect with a coarse powder; and that the finer the powder, the more easy, the more perfect, and consequently the more economical was the exhaustion.

The third series proved that the resin precipitated by water only, without acid, could not be separated at all without heat,

was applied to this and other substances by the Eclectics through ignorance of its true nature. It is a resin proper, and its analogues are the resins of scammony, jalap, etc., and there seems no good reason for miscalling it by an incorrect name which has attained an equivocal popularity, and the common pronunciation of which is so vulgar and inelegant.

* This want of details, which are often as indispensable to practical application as the quantities are, is a serious objection to many, if not to most of the processes of the U. S. Pharmacopœia. The great advantages of brevity and condensation are often obtained at the expense of utility in practical application.

and that heating so changed the physical properties of the resin as to prevent its being recognized by any known description.

The fourth series proved that the use of too much acid in the precipitation rendered the product granular, heavy and moist, dark in color, and diminished in quantity.

The fifth series proved the useful practical limits of acidulating the water for precipitation to be not less than ten minims, nor more than forty minims to each pint of water. That three pints of acidulated water was sufficient for each 7680 grains of powder; and that the product cannot be dried at a temperature much above 90° F. without risk of becoming hard and discolored, but that below that temperature it uniformly retains its light friable condition and its light color.

The sixth series determined the progress and rate of exhaustion in percolating a very fine powder. The fact that the resin was the only purgative portion of the root was proved by repeatedly swallowing boluses of the extract deprived of the resin only, in quantities increased up to 60 grains at a dose. And the circumstance that such doses were continued through two days without discoverable effect of any kind, leads to the inference that this extract is inert, like the similar extract of jalap. Then, as the resin is easily and perfectly precipitable, the powder offered an excellent type for determining in a very practical and useful way the effect of percolation in exhausting the powder of its resin, and of its extractive matter, and of comparing the progress of the exhaustion in relation to these two constituents of the product. Both the resin and the extractive matter are very soluble in the menstruum, and apparently equally so; and as the association of the two in the root must be very close, it might be expected that the alcohol would extract the two together in their natural association,—that is, that every particle of extract, from first to last, would contain its corresponding proportion of the resin. This, however, is not the case, the resin being extracted far more rapidly than the inert extractive matter; and this remarkable circumstance is of great interest and importance in its bearing upon percolation in general, and particularly where alkaloids are to be extracted. In the experiments recently published, wherein the cinchona alkaloids were determined in the successive

portions of percolate, the determinations were more difficult and less accurate, and the results were therefore less reliable; and beside, the extractive matter there is well known to be useful, and not inert. This decisive confirmation of the general results obtained with the cinchonas is important, and as far as Cinchona and Podophyllum may be safely accepted as types or representatives of classes of drugs, the results may be considered as established for percolation in general. It is a remarkable circumstance, and very instructive in relation to percolation in general, that with powders of the same degree of fineness, taken in the same quantities, managed in the same way by the same hands in the same apparatus, and with the same menstruum, Cinchona requires four times as much menstruum and four times as much time as Podophyllum to attain the same degree of practical exhaustion. In this respect, as well as in others, it is interesting to compare the tables given of the percolates of the two substances.

The pair of percolations, given in the table on page 5, are selected from three which compose this series, as being very successful and accurate, and well sustained by others which preceded them. The same powder, percolater, menstruum and management was used with both, as well as the same measuring flasks, etc., and pains was taken to avoid all sources of error which previous experience had detected, and the drying before a final weighing, which is a fruitful source of error in all such researches, was continued for ten days. The table, it is hoped, will sufficiently explain itself, but the attempt to distinguish, in a column of remarks, the difference in the appearance of the different portions of resin and extract, is unsuccessful, except in showing that there was a marked difference.

The difference in the successive portions of resin precipitated was not in appearance only, but also in physiological effect when taken. It having been first proved that one-fourth of a grain of the resin as obtained altogether, by a previous process, when taken at a definite hour of the evening, with due regard to condition, diet, exercise, etc., would produce a distinct aperient or laxative effect on the following morning, the filter containing the

Sixteen troyounces, or 7680 *grains of* PODOPHYLLUM, *or* MAY-APPLE ROOT, *percolated with alcohol, s. g.* 0·835.

Proportion of Resin, and of alcoholic extract, yielded by successive portions of the percolate.

PORTION OF THE PERCOLATE.	YIELD OF DRY RESIN.			YIELD OF DRY ALCOHOLIC EXTRACT.		
	Yield in grains.	Percentage of the entire yield.	Remarks.	Yield in grains.	Percentage of the entire yield.	Remarks.
1st four fluidounces	192·8	61·755	Yellowish, with green tinge.	326·9	41·765	Rich brown, resinous.
2d " "	82·8	26·521	" "	174·4	22·281	" "
3d " "	25·2	8·071	Leaden white, or greyish.	82·7	10·566	" less resinous
4th " "	4·4	1·409	Yellowish brown, darker.	53·8	6·873	" tougher.
5th " "	2·8	·900	" " lighter,	40·5	5·174	" "
6th " "	2·0	·640	and this, with all the remain-	37·8	4·837	Lighter brown, tougher
7th " "	1·5	·480	ing portions, rises to the sur-	33·2	4·241	" " "
8th " "	0·7	·224	face of the mother water.	33·4	4·267	" " tough.
	312·2	100·000		782·7	100·004	
1st half-pint	275·6	88·276		501·3	64·046	
1st twelve fluidounces	300·8	96·347		584·0	74·618	
1st pint	305·2	97·756		637·8	81·485	
1st twenty fluidounces	308·0	98·656		678·3	86·659	
1st pint and a-half	310·0	99 296		716·1	91·496	
1st pint and three-fourths	311·5	99·776		749·3	95·737	

seven-tenths of a grain of resin precipitated from the 8th portion of the percolate, was swallowed under the same conditions.

The effect on the following day was but little, if at all greater than from the fourth of a grain of the unseparated or normal resin. Then, after an interval of more than two months to allow the effects to pass off entirely, the filter containing the one and five-tenths grains of resin from the 7th portion of the percolate was swallowed under the same conditions as before. The effect of this dose was more than aperient or laxative, but was only moderately purgative, commencing its action no earlier than the other doses, and ending about twenty-nine hours after the taking. This effect was estimated as about three times that of the former filter, or at most four times the effect of the fourth of a grain of unseparated resin. As far as these experiments can be relied on, then, they tend to show that the purgative quality of the resin diminishes more rapidly than the quantity, the next to the last portion requiring six times the quantity to produce four times the effect, and the last portion requiring nearly three times the quantity to produce the same effect, as the fourth of a grain of the normal resin.

Thus, in the progress of the percolation, whilst the resin diminishes very rapidly in its relation of ratio to the extract, it also diminishes rapidly in medicinal effect for a given quantity, so that it is doubtful whether that obtained after the first pint be worth the time and trouble of extraction. If the cost of menstruum be admitted into the account, however, it becomes altogether unimportant. It follows, from these considerations, that the formula for the officinal extract of Podophyllum, like that for the corresponding extract of Jalap, is very wasteful in menstruum and in time, and yields a product encumbered with much useless matter.

The seventh and final series in the experiments upon Podophyllum was undertaken to determine the details of a proper working formula, which should yield a uniform and good product with the greatest economy, convenience and ease, in the hands of those not specially educated to it by practice; and the results are given in the following formula:

Take of Podophyllum, in very fine powder, forty-eight troy-ounces,
Alcohol, five pints,
Muriatic acid, two fluidrachms,
Water, a sufficient quantity.

Divide the powdered Podophyllum into three portions,—the first of twenty-four, the second of fourteen, and the third of ten troyounces,—and repercolate them as follows:

Mix the first portion into a smooth uniform magma with two pints of the alcohol, cover the mixture closely, and set it aside for twelve hours. Then stir it well, pour it into a ten-inch funnel properly arranged for percolation,* cover the surface with a disk of filtering paper, pour on it two pints of the alcohol, and cover the funnel closely. When twenty-two fluidounces of percolate shall have passed, mix this with the second portion of the powder into a smooth and uniform magma, cover it closely, and allow it to stand twelve hours. Then stir it well, pour it into an eight-inch funnel arranged for percolation, cover the surface with a disk of filtering paper, and pour on it the percolate from the first portion. When sixteen fluidounces of percolate shall have passed from this second portion of the powder, mix it with the third and last portion of the powder into a smooth and uniform magma, cover it closely, and allow it to stand twelve hours. Then stir it well, pour it into an eight-inch funnel arranged for percolation, cover the surface with a disk of filtering paper, and, keeping the funnel covered during the intervals, pour on it the percolate from the second portion, as it is required.

When the last of the alcohol shall have disappeared from the surface of the first portion of the powder, pour water into the funnel, and continue the percolation with water until three pints and ten fluidounces of percolate shall have been received from this portion, and poured on the second portion. When the last of this percolate shall have disappeared from the surface of the second portion of the powder, pour on eight fluidounces of the alcohol, and when this shall have also disappeared, pour on water, and continue the percolation with water until three and a half pints

* See paper on the Pharmacy of the Cinchonas, page 410, vol. xxxix.

of percolate shall have been received from this second portion of the powder, and poured on the third portion.

When the last of this percolate shall have disappeared from the surface of the third and last portion of the powder, pour on the remaining eight fluidounces of the alcohol; and when this shall have also disappeared, pour on water, and continue the percolation with water until three pints and six fluidounces of percolate shall have been received from this third portion of the powder. Pass the percolates from one funnel to the next, in the order in which they are received, in portions of eight or ten fluidounces, waiting after each addition until that portion passes into the powder, before adding the next.

Distil the final percolate, and recover the alcohol from it by means of a water-bath. Add to the residue in the still three fluidounces of water, heat the mixture, stir it well, transfer it to a proper vessel marked to twelve fluidounces, and make it up to that measure from the recovered alcohol, using a portion of the alcohol so taken to rinse out the still, and stir the whole together.

Then add the Muriatic acid to seven pints of water contained in a proper precipitating vessel, stir the mixture briskly, and pour the diluted extract into the acidulated water gradually during the agitation. Allow the whole to settle during two hours or more, pour off the clear supernatant liquid, replace it with water, stir well and again settle and decant the washings. Transfer the precipitate to a twelve inch filter in a funnel, and when it has drained, pour on a pint of water in two portions, and when it has again drained, transfer the filter and contents to a porous tile, or to a piece of bibulous paper laid upon a folded napkin. Finally dry the precipitate at a temperature not exceeding 90° F. = 33° C. and rub it to powder. The quantity obtained will vary with the quality of the root, between three and a half and five and a half per cent. for the ordinary commercial grades.

The resin is a very light mobile powder, of a light dingy yellow, or brownish yellow color with a tinge of green, varying somewhat in this green tinge. It has the peculiar odor of the root, and a bitter, mawkish taste, the bitterness of which is rather slowly developed and is persistent.

The process of repercolation is very well adapted to this powder, and, when carefully and skillfully performed, saves at least one-third of the alcohol otherwise required. The details of this process given here are such as especially apply to this powder, and here again the slowness of the process is indispensable to success. Indeed, the farther the writer's experience extends upon this subject of percolation and repercolation, the more evidence is obtained as to the primary importance of time in effecting the exhaustion of the powders. Nine or ten days is required for the proper performance of this repercolation, and the difficulty of avoiding loss of alcohol by evaporation during this prolonged period is a serious objection to the process.

When the alcohol has nearly ceased to come over, the extract in the still measures five fluidounces, the water added brings this measure up to about eight fluidounces, and the additional alcohol brings this up to twelve fluidounces. There is therefore about six fluidounces of alcohol in the extract when poured in for precipitation, and this added to the two and a half pints received, leaves the loss by evaporation to be estimated at two pints or more of the five. By special apparatus and particular care this can be much reduced, but the aim here is to present the process as it would be conducted in common practice.

The addition of water to the concentrated extract in the still is useful, first, by rendering the extract more liquid, and further, by dissolving the large portion which is soluble in water to render it more easily separable from the resin in the precipitation. The addition of this water precipitates much of the resin and renders the extract muddy, even when heated, but the after addition of the alcohol makes the whole a perfect and clear solution as it should be before being poured into the acidulated water. This pouring in should be slow, and the stirring active, to avoid clotting of the precipitate. With the proportion of acid indicated, the precipitate settles out promptly, so that in two hours more than one half of the mother water may be poured off and thrown away. Another water put on and decanted in the same way, and then a displacement washing in the filter are considered quite sufficient. The resin is rather nicer and lighter the slower it is dried, and when it does not mould is perhaps best dried

upon plates shielded from dust, at ordinary temperatures. The mode of drying has much to do with the color and lightness of the powder, more even than the quantity of water used in the precipitation. The washing also has much to do with the character of the powder, for if much of the gummy extractive matter be left in, it will dry by contracting and will become heavy and dense, difficult to rub up, and yield a heavy powder of less therapeutic value, because more difficult to incorporate intimately with corrigents and excipients.

This resin is neither a very active nor a very prompt cathartic in any reasonable dose, but on the contrary is rather slow though certain. It prominently affects the upper portion of the alimentary canal, as aloes does the lower portion, and upon this prominent characteristic its value as a purgative chiefly depends.

To this circumstance, and perhaps to this alone, it owes its reputation as a chologogue, its action, by continuity and contiguity, being extended to the liver and gall bladder. Hence it becomes important to give it in such a form as to secure, beyond a doubt, its solubility in the stomach. With many persons its operation is harsh and unpleasant, and the effects and results are unsatisfactory; but in a large majority of cases, when used with skill and judgment, it becomes a valuable agent. Its therapeutic properties have as yet been imperfectly studied, and its uses are undeveloped. A careful, industrious and earnest observer, is however, now at work with it, and the paper of Dr. Caleb Green, of Homer, N. Y., will doubtless add to the present stock of knowledge of this substance. It appears to be best adapted to the purposes of a slow aperient, or at least such is the character it has gained among practitioners in this neighborhood, and when properly guarded and corrected, and given in small doses adjusted to a definite and well understood condition and object, it generally grows in favor with those who use it, so that few physicians who learn its peculiarities and how to use it, ever give it up.

The mode of administration appears to be of much importance. Given alone or unguarded it seems to shock the mucous linings, and to produce nausea and griping of a peculiar kind, confined to the upper portion of the intestines. But when properly comminuted and shielded, its operation is generally

without sensation. Of a resin prepared as above described, one-fourth of a grain is a sufficient ordinary dose for an adult; and for the development of its best uses it appears better to repeat than to double this quantity. In view of its peculiar qualities and effects, the writer some two years ago, contrived the following formula for a pill, which, under the name of Podophyllum Pills, has become quite popular and useful, and perhaps deserving of publication.

Take of Resin of Podophyllum, thirty-six grains.

Alcoholic Extract of Belladonna, eighteen grains.

(Or Alcoholic Extract of Hyoscyamus, one hundred and forty-four grains.)

Powdered Capsicum, one hundred and forty-four grains.

Powdered Sugar of Milk, one hundred and forty-four grains.

Powdered Acacia, thirty-six grains.

Glycerin, forty minims.

Syrup, a sufficient quantity.

Put the Resin and Sugar of Milk into a mortar of large size and triturate them together very thoroughly. Then add the Alcoholic Extract of Belladonna, and again triturate very thoroughly. Then add the powdered Capsicum and Acacia and repeat the thorough and prolonged trituration. Finally add the Glycerin, and Syrup enough to form a mass of proper pilular consistence, and beat the whole well together. Divide this into one hundred and forty-four pills, dry these by exposure at ordinary temperatures until just hard enough to retain their form, and then keep them in a well stopped bottle to prevent further drying.

The Oleo-resin or Fluid Extract of Capsicum may be substituted for the powder if desired, and in acid conditions of the stomach, or where it is desired to insure a ready solution of the resin, a small addition of Exsiccated Carbonate of Soda may be made, say one fourth of a grain in each pill. Alcoholic Extract of Belladonna seems to be a more certain and effective corrigent than the Hyoscyamus, and is required in much smaller quantity. Both have been used with success, but the best effects are said to be obtained from the first. Good Capsicum in very fine powder is one of the best and strongest of the aromatics, and hence its use as the stimulant corrigent against nausea and griping. It

could hardly be substituted without increase of bulk, or loss in effect, and yet is liable to make the pill burn the fauces and throat in swallowing. The Sugar of Milk as an excipient is chosen for its hardness and slow solubility, to divide minutely, cover and sheathe the resin. It may be substituted by sulphate of potassa with equal effect, and if either be taken in crystals, and rubbed with the resin until reduced to a very fine powder, the effect, as in making Dover's Powder, is so much the better. The Acacia is used to give adhesiveness to the mass, and the Glycerin to prevent the pills from becoming hard or less soluble. This is a very useful addition to all pill masses, and particularly so to those containing resinous substances. The repeated and prolonged trituration directed is regarded as a very important matter. All harsh, drastic, or active substances have their harshness and acridity very much diminished by such management, and there is some reason for believing that this pill would be a different thing without this management, and that the more time and labor bestowed upon the material in this way the better.

These pills are rarely if ever well used as a purgative or cathartic proper, and are best and perhaps only adapted to useas an aperient and alterative medicine. One pill taken at night will usually insure the morning evacuation if its occurrence be doubtful, or will increase it and render it more pultaceous and easier. If the pill be without effect, or produce too slight an effect, another may be taken in the morning. This will commonly ensure a pultaceous though not copious evacuation before evening, often without sensation, but generally with occasional slight uneasiness, but with nothing like active purgation. In the ordinary and perhaps the best use of this pill to overcome constipation, the effect, or want of effect from the first dose may be disregarded, and no more be taken until the next evening. The second evening dose is pretty sure to produce an evacuation on the following morning, and this of an improved character. A third pill on the third evening still improves the effect, and often so far re-establishes a habit of daily evacuations that it becomes proper to omit one evening and renew the dose on the fifth. Next, two evenings may be omitted, and next a pill may be taken twice a week, then once a week, and so on until the habit of

constipation is corrected, and the habit of daily morning evacuation re-established. In more obstinate cases, two or even three pills in the twenty-four hours may be required, and occasionally these give as little inconvenience as when only one is taken. More commonly, however, they produce occasional uneasiness and discomfort, often amounting to what many describe as pain, and this at intervals throughout the day. In an obstinate constipation, or one of some days duration, they will very rarely produce evacuation without discomfort or even positive pain, no matter how well they may be managed. But this is incident to the condition of body, and is not chargeable to the medicine. After the first effect is obtained a slow and careful use of them will often complete the cure.

When used in some such way as that indicated, this resin seems less liable than other purgatives to produce that reaction which tends to constipation after its use. Indeed, under favorable management there seems to be no tendency to this reaction, nor is the intestinal canal so emptied that days are required to fill it up to the normal condition in which natural evacuation can be expected.

In brief, therefore, the advantages of this resin are, first, that it acts upon the upper portion of the intestinal tract about as exclusively and as specifically as aloes does on the lower portion, and from this circumstance affects the liver, pancreas, etc., as aloes does the uterus, bladder, etc. It is therefore a chologogue as aloes is an emmenagogue, and probably in no other way. Second, it is slow and certain in its operation, and not exhausting. Third, it has little or no tendency to produce constipation after its use.

Its disadvantages are that it is often harsh, disagreeable and insufficient in its operation, and so peculiar that it is badly borne by a larger proportion of persons than other similar medicines. And, that for its proper use it requires more care and skill than most medicines, to avoid its bad qualities. When used in large doses as an active cathartic it will almost always cause great complaint, and very few physicians will continue to use it thus without acquiring a great prejudice against it; and such often lose the advantages of its more useful application in its proper sphere.

In combination with other purgatives it appears well adapted to replace Jalap, Scammony and Gamboge with advantage to the combinations, and it is in such combinations that it has been hitherto most commonly used, and perhaps with most advantage. Such combinations are, however, by no means favorable to an accurate knowledge of its peculiarities, either in effect or adaptation, and they tend to that polypharmacy which makes medication so uncertain and medical testimony upon therapeutic values so variable.

It is well worth while to caution those who handle Podophyllum in fine powder, and especially the resin, in rubbing up, making plls, etc., against getting the dust in the eyes. It is exceedingly irritant, worse than cantharides, and almost as bad as euphorbium; and it not unfrequently happens to the writer, in handling it on the large scale, to have men laid up for two or three days at a time and suffer severe pain, but always thus far without permanent injury. Much care is always used to protect the eyes and to well wash the hands, etc, but yet they occasionally suffer, and in a recent instance the attack did not come on until 24 hours after the resin had been finished and put away. The hands most frequently convey the powder to the face and eyes, and the handling of dusty overhauls, or a brush, or some such matter, after the necessity for caution has been dismissed from the mind, will occasionally produce the effect.

In the foregoing paper the unsettled questions as to the constitution of this resin—as to the presence or absence of berberina when muriatic acid is used, and as to whether berberina plays an active part in the peculiar effects ascribed to Podophyllum—have been purposely avoided as being, in the present state of our knowledge of the substance, more curious than practically instructive. The writer feels sure that, for the present, in obtaining a uniform active resin from Podophyllum we have gone far enough, if not too far, until its qualities are better investigated, since a simple fluid-extract, or an alcoholic extract (not the officinal) would be perhaps better and safer preparations upon which to accumulate accurate knowledge of its effects.

Brooklyn, November 26th, 1867.

PULO ARMAGOZO (BITTER TREE OF TEXAS).

Brownsville, Texas, April 9th, 1867.

EDITOR OF AMERICAN JOURNAL OF PHARMACY:

Dear Sir,—For the past two or three years I have heard much regarding the efficacy of a shrub, or tree, known in this section by the Mexican name of "*Palo armagozo*" (bitter tree), in the treatment of chronic diarrhœa and dysentery. It was first brought to my notice by Hon. Judge Dougherty, a resident of this place, and who has used it with wonderful effect. He asserts that he has cured very many who have suffered from the above complaints for many years. It is given in infusion,—say one ounce to the pint.

I send you pieces of the stem and root, and would request that it be analyzed, and, should you think it of any value as a medicine, to publish it, so that all may know of it. I am unable to describe the tree, as I have never seen but the pieces sent you. I am assured that it can be procured in the greatest abundance. Both the stem and root are used. Should you be pleased to give the above request the attention I solicit, you would confer a great favor on Your Subscriber, J. L. PUTEGUAT.

[An explanatiun is due to the writer of this letter. It was not received by the Editor until his return from Europe, late in September.

The specimens alluded to in the letter consist of two pieces, each about a foot long, and an inch to an inch and a half in diameter; one, a section of the stem, with the remains of lateral branches, varying from a line to three lines in diameter. The wood, which is lemon-yellow colored, deepened by moisture, is covered with a gray-colored bark, less than half a line thick, with numerous lichens attached. Beneath the epidermis the bark is first brownish and then yellow, of a shade little different from the wood. The wood is close-grown, but not very dense. A cross section with a sharp knife exhibits radial lines and circles, with deep yellow resinous layers between. The bark is exceedingly bitter, reminding of quassia; the wood is very slightly, if at all bitter.

The specimen of root consists of a main or tap root, with a few lateral cylindrical rootlets, varying from one to two and a

half lines in diameter. The root bark is somewhat thicker than that of the wood, and is equally if not more bitter. The ligneous part of the root is less dense, and full of comparatively large open pores, occupying the position of the resinous layers in the wood. It also possesses some bitterness.

A decoction of the root and wood had a very pale straw color, and quite a bitter taste. A hasty application of tests indicated the presence of starch in small quantity, but little gum, and no indication of berberina or other alkaloid; but the trial was not conducted with much care, owing to the incomplete state of the information relative to the plant. It is suggested that our correspondent pursue the inquiry until he can get leaves and flowers of the plant, and further information in regard to it, and forward them to us, when we will examine it more critically.—Ed. Amer. Jour. Pharm.]

ON LIQUOR MAGNESIÆ CITRATIS.

Boston, Sept. 14th, 1867.

To the Editor of the American Journal of Pharmacy:

Dear Sir—Having read several articles on citrate of magnesia in your Journal, and knowing how difficult it is to make the solution permanent, I will give you my formula, which I have used for the last twelve years; and I would like to have you try it:

℞. Magnesia calc., ℥ij.
Acid cit., ℥xss.
Aqua, Oij. ℥iss.

Dissolve the acid, then add the magnesia; let it stand until the magnesia is dissolved, then filter (to each bottle put in ℥iij. of the solution, with ℥ij. syr. simplex; fill with water); to each bottle 45 grains of bi-carb. potassa; cork tightly. The solution should be bottled as soon as it is made.

Yours, respectfully,

W. D. Atkinson, Jr.

[In accordance with the request of the writer, we have prepared this solution and, as we expected, find it too acid, though perhaps more agreeable to the taste than when more neutral. When tried it proved efficient. If lemon syrup flavoring were added it wonld be improved.—Editor Am. Jour. Pharm.]

NOTES OF TRAVEL IN EUROPE.

Rome, Italy, May 27th, 1867.

PROF. MAISCH,—It is with a feeling allied to disappointment that I at last take up the pen to comply with the partial promise given in the May number, because the hurried process of travel which has occupied nearly all the time since leaving Liverpool, in order to reach Southern Italy before the warm season sets in, has altogether prevented any earnest and available inquiries of a nature interesting to pharmaceutists.*

A call on Mr. John Abrahams, of 86 Bold street, President of the Liverpool Chemists' Association, was courteously received, and the opportunity afforded to examine cursorily the very creditable collection in the museum of the Association. In passing through London, the museum and laboratory of the Pharmaceutical Society were visited. They are contained in a commodious building at the corner of Bloomsbury Square and Great Russell street. A large brass plate on the door informs that the "Pharmaceutical Society" centres there. The lower story is devoted chiefly to the museum, which is contained in four separate apartments: two to vegetable substances, one to mineral bodies and salts, and a small room to animal substances. All are contained in substantial mahogany cases, and the organic drugs arranged according to the natural system, as indicated on the exterior of the cases above as thalamifloræ, calycifloræ, carollifloræ, monoclamydeæ, petaloidæ, dicotylogenæ, glumaceæ, thallogenæ, acrogenæ, etc. The collection of rhubarb is quite extensive, embracing, besides the usual commercial varieties, a very complete set of specimens of English rhubarb in various forms, as Canton style,—large flat,—Dutch style, and cylindrical pieces, besides Himalayan rhubarb, trimmed and rough. The specimens of opium embrace the East Indian varieties, the Egyptian, Persian, Constantinopolitan, English, and probably French opium, though it was not seen. Sections of a manna tree, exhibiting the wound and exudation, and of nux vomica and other trees, were observed. Among the balsams are the liquidambar balsam of Guatemala, white balsam Peru, the fruits of "Myrospermum Pereiræ," very fine specimens of amygdaloid benzoin and guaiac resin, in tears. Several of the groups are well illustrated with the adulterations, and many of the roots and other parts are exhibited in their fresh state, as preserved in spirit, so as to give a better idea to students of their structure and form. In this way roots allied in form, but different in properties, like those of parsley and hemlock, and liable to substitution, are more easily distinguished and understood. An entire case is devoted to the cinchona barks (which have been largely

* Some apology is due to the readers of the Journal for introducing this letter so much out of time. Before leaving home, Prof. Maisch, who had kindly undertaken (and who so ably accomplished) the Editorial duties during our absence, was led to expect some aid in this form. After this letter was hastily written, during the week's sojourn in Rome, it was thrown aside as unworthy of the valuable space it would occupy, and now, after revision, appears mainly because more appropriate original matter has not presented.—EDITOR.

contributed to by Dr. Pereira and Mr. Howard), with their principles and salts. Many of these specimens are of great interest for illustration, and have the initials of Pereira and of Howard upon their labels. The sennas are also abundantly illustrated.

The second room contains the products of monocotyledonous and cryptogamous plants. Excellent collections of cardamoms, aloes, starches and sarsaparillas are found here, including nearly all the varieties known. To illustrate the fungi, models are shown, colored to represent the living plants. In the collection of animal substances is a stuffed musk deer, and a sturgeon,—the latter used to explain the subject of isinglass, and a great variety of substances of animal origin, including all that are officinal and many non-officinal, as bezoar, hyraceum, ambergris, coral, etc. The anatomy of the leech is represented by model, and the subjects of cantharis and cochineal by numerous specimens.

In the mineral room the finer chemicals and organic salts are exhibited in flat cases, the substances, when rare, being contained in shallow goblets covered with plate glass. There are several very good sets of models of crystals, of glass and wood, and skeleton crystals, and, in many instances, a salt is accompanied by a model of its crystal. There are many fine crystallizations of the mineral salts, and also a collection of coal-tar products. Various other objects connected with pharmacy, besides drugs, are seen, but we did not find a museum of apparatus and appliances, nor was there a collection of pharmaceutical preparations observed.

The lecture room is quite small, and will not accommodate more than one hundred students; it is amphitheatrical in arrangement. Nothing surprised us more than this evidence of the small number of students in the most populous city of the world. The library we did not get time even to glance over. The laboratory for practical instruction occupies the new upper story, built by the legacy of Mr. Bell. The room is well arranged for the purpose in view; the tables are placed around the exterior of the room as well as in the centre, and appear well adapted to the purposes in the details of each table or counter, and the general arrangements for heating, ventilation, weighing, etc. The laboratory was in operation at the time, a number of students being at work, but the director, Dr. Attfield, and his assistant, Mr. Tilden, afforded all the facilities for seeing the establishment that the short time permitted. I also had the pleasure of meeting Prof. Redwood, Prof. Bentley, and the very polite and attentive Secretary and Registrar of the Society, Mr. Bremridge, whose devotion to its interests is one of the best agencies at work in the advancement of the Society. Nearly always on the spot, he is ready to meet the numerous calls for information which so extensive a Society demands. Unfortunately, the season was past for the "Pharmaceutical Meetings," and no opportunity to be present on one of these occasions was afforded.

A brief call at the establishment of the late Jacob Bell, on Oxford street, introduced me to the acquaintance of Mr. Barnard, of the present firm,—

the Business Editor of the Pharmaceutical Journal. Mr. B. politely showed me their pharmaceutical laboratory, adjacent to the store,—the same formerly used by Mr. Bell. Much of the interest of this brief visit to London was due to the kind attention of my friend Mr. Daniel Hanbury, of Allen & Hanbury's, Plough Court,—the establishment noted as that of the late William Allen, F.R.S.

Being desirous of reaching Paris in time to meet friends going south, the many attractions of this "vast hive of humanity" were postponed until August, and, leaving on the 28th via Dieppe and Rouen, I arrived in that city on the 29th of April. During a stay of four days in the great metropolis, the leading objects of an architectural character were visited, and a day spent at the Exposition, which afforded much gratification, and gave an earnest of what may be expected on returning from Germany. When at the Garden of Plants, being near 6 Rue Censier, I called on the venerable Prof. Guibourt, with a letter from our mutual friend E. Durand, of Philadelphia. M. Guibourt was engaged in his garden, training his vines, and giving directions. He soon came in, and, on presenting my letter, he recognized in the superscription the handwriting of his friend Durand, and gave me a very cordial reception. M. Guibourt did not speak much English, and I speaking but little French, we met the difficulty by placing a sheet of paper between us, and held our interview in writing, each being able to read the written language of the other. M. Guibourt looks older than I had expected to see him, judging from the picture in our College of Pharmacy. In stature he is below the medium height, otherwise well built, rather stooping than erect, with a quick, vivacious eye. He lives very retired, not far from the hall of the Society of Pharmacy, and appears to be very industrious in his habits. My friend Alfred B. Taylor having sent by me a steel measure of length, the half of the unit of length of his octaval system, to be presented to the Pharmaceutical Congress, should the subject of weights and measures be considered, I gave it, with an explanatory volume, to M. Guibourt, who agreed to take charge of and present it in due course when the Congress should meet in August, on which occasion I hoped to meet him again.*

On the 4th of May we set out for the south, via Dijon and Lyons, passing up the valley of the Seine until this river became a rivulet, and down that of the Saone to Lyons and the Rhone, following the latter river to the Mediterranean at Marseilles. This long distance of nearly six hundred miles is passed by rail in about nineteen traveling hours, stopping half an hour at Dijon, half a day at Lyons, and half a day and a night at Nismes. We saw but little of the great centres of the Burgundy wine and the silk trade. Before reaching Dijon, the line of the road passes through the

* It is hardly necessary to say that this pleasant anticipation was never realized, as the venerable savant died on the second day of the meeting of the Congress, at which he should have presided.

Coté d'or wine region, and a large portion of the soil is devoted to the grape. Here, as well as along the Rhone valley, the vines are planted about four feet apart each way, like Indian corn, and are trimmed back to a stump from six to twelve inches high; the entire soil being plowed up in the spring, before the vine shoots, giving a peculiar dotted appearance to the hill-sides as we passed them. The vignerons were busily engaged in placing stakes about four feet long beside each root, to support the fruit-bearing branches, which are tied to them, and kept cut back and thinned out. After passing Dijon the English walnut (*Juglans regia*) was seen in culture; but south of Lyons this tree is largely cultivated, especially near Grenoble, where its fruit is a staple. In descending the Rhone valley due south vegetation changes very perceptibly in its character in the course of one day's travel. The plantations of white mulberry, for the silk culture, became more abundant, and were just ready for feeding. We saw the women, with short ladders, gathering the leaves in bags and baskets, which is continued until the trees are stripped,—in which state they present a blighted aspect, as though the army worm had passed over them. The energies of the trees then throw out a new crop of leaves, and many cut back the shoots, and form a new head to the tree for the following year. But all are not thus cut back, some being allowed to branch and spread like apple trees. When they are headed in, the intervening soil is planted with grapes or other crops, and the whole kept plowed.

Before arriving at Avignon, the olive, the almond and fig trees begin to be seen, and at Tarrascon and Nismes olive orchards are very numerous, and orchards of apricots in the most vigorous health are abundant; in fact, the delta of the Rhone south of Nismes and Tarrascon, called the "isle de la Camargue," is exceedingly fruitful, and affords largely of olive oil, besides contributions of early fruit to the Paris market. The peculiar dull, pale tint of the evergreen foliage of the olive gives to the olive groves a melancholy aspect, strongly contrasted with the large shining deep green leaves of the fig, and the equally rich but varied foliage of the apricot. The neighborhood of Avignon is also noted for the culture of madder, though we were informed that this branch of industry had of late much decreased in that vicinity, owing to a diminished foreign demand. Madder was introduced into this neighborhood by a Persian called *Jean Althen*, to whom a bronze statue is erected on the ridge above the town. Some cantharides are also collected near here, and honey and olive oil are staples.

The Roman antiquities of the valley of the Rhone, especially those at Vienne, Tarrascon, Arles and Nismes, are of great interest, and numerous middle-age remains exist, but are foreign to the subject of this letter. After leaving Tarriscon, the road proceeds south to Arles, at the head of the delta, and then takes a south-easterly direction to Marseilles, passing the tunnel of La Nertha, nearly three miles long and thirty-three feet high, ventilated by twenty-two shafts; soon after which the Mediterranean

is seen, with the vicinage of Marseilles in the distance; but another tunnel of 1500 feet is passed before entering the land-locked inlet on which Marseilles lies. The view of the city and harbor, after passing this tunnel, is very fine, with the church Notre Dame De la Garde crowning the eminence towards the sea, looking south-east.

Marseilles is the New York of France, and the centre of a large foreign trade. Our stay at this city was very brief, and no opportunity was afforded to look after the olive oil and castile soap industries. A walk along the quays offered many objects of interest; on the Quai de Napoleon, at the head of the harbor, various shell-fish and sea products were offered for sale, among them a species of zoöphite, called a sea violet, which is edible, and tastes somewhat like an oyster. One of the most striking objects was wheat, which lay in great heaps directly on the quay, without shelter, with men engaged in cleansing it by means of wide shallow sieves, suspended like a scale pan from a support made by three poles. The operative, by a few dextrous motions, causes the sieve to do its office, and then tosses the contents on the heap. Certainly this primitive method indicates some lack of enterprize. Large quantities of olive oil in huge casks, much like those used here for lamp oil, were seen. This great staple is contributed partly by the neighboring coast trade, but more by Mediterranean commerce—Tunis, and doubtless Algiers contributing largely. Casks of madder, sacks of purging cassia, senna and various other drugs, piles of wine and oil jars, bales of cork wood and numerous other products are strewn along, either just landed, or about to be exported.

Our next stopping place was Nice, to which a railroad extends. The route along the Mediterranean possesses much interest; the sea is often in sight until Toulon is passed, when the road leaves the coast, proceeding north-east along the high ground on the left hand (N.W.) side of a wide and fertile valley, extensively given to the olive, and approaches in sight of the sea at Frejus, noted as the birth place of Roscius, the Roman actor, and where Napoleon landed from Elba.

In approaching Nice, we passed through Cannes, and within a few miles of Grasse, both celebrated for the salubrity of their climates, and for their industrial flower gardens, distilleries of perfumes and oils, and their manufacture of pomades. From these districts a large portion of the French trade in perfumes is supplied. All along the route, fig, mulberry, olive, and almond trees are abundant. Many olive trees were of great age, appearing like old apple trees with irregular contorted branches, trunks one to two feet in diameter, but the evergreen foliage is so entirely different in hue and shape, that they will never be mistaken for apple trees. As we passed along, the incipient flower stems were being developed, but many weeks must elapse before they bloom. Near Cannes our route lay near orange groves, which perfumed the air, and their fragrant blossoms could be seen peeping out from the rich foliage.

Nice is a spot in much favor with English invalids in winter, situated directly on the sea, and sheltered from the north by the outlying spurs of the Savoyese Alps. The public squares and walks are ornamented with the *date* and other species of the graceful palm and other exotics, which give a tropical character to the landscape, while numerous flowering shrubs, tastfully arranged in groups, add variety, beauty and perfume. A species of "medlar" (Mespilus * * *) is common here and in Italy, bearing a fruit about the size of a medium plum, when ripe of a bright yellow, and quite agreeable to the taste, especially acceptable when one is thirsty. Here, as in nearly every considerable city frequented by the English, there is an "English Pharmacy," where medicines prepared according to the British Pharmacopœia can be had, and prescriptions compounded in the English style. This not only shows the number of English travellers on the continent, but especially exhibits the national habit of taking medicines freely, a habit which we Americans inherit with t[illegible]chful legitimacy from the parent stock.

A ride to the top of the Chateau, a hill about 320 feet elevation, gave us a magnificent panorama of old and new Nice on the north and west, and the port of Nice and Villa Franche, on the east, whilst to the north, over and far beyond the adjacent mountain range, we obtained our first good view of the snow clad alps of Piedmont. The vicinity of the City of Nice is almost enveloped in foliage, largely the olive, intermingled in the numerous villas with tropical and sub-tropical trees in great variety. The Agave Americana grows luxuriantly in the open air, and is used in many hillside villas as a most effectual hedge plant for precipitous rocky ledges, where a little soil exists in the crevices to give its strong roots an opportunity to insinuate themselves. There are several distilleries of oils and waters and makers of perfumes here, and in returning from the Chateau we called at the laboratory of M. Marche, and were politely afforded an opportunity of inspecting some of the processes going on and the instruments used in others. Being early in the season, only orange flowers were under treatment; around several heaps of the blossoms just brought in from the suburban orange groves, women and girls were seated, busily picking out the green parts and impurities capable of influencing the oil of neroli and orange flower water unfavorably. They are then transferred to the tinned copper still which holds 100 kilogrammes of the flowers, (about 215 lbs), with a diaphragm below. In this establishment direct heat is used, which is true of the best factories at Cannes and Grasse, according to Mr. Hanbury. The process is continued from five to ten hours, according to the activity of the fire, and the product is about five ounces of oil of neroli and a large quantity of orange flower water which is fractioned, some being sold as first obtained, and some strengthened by cohobation. The apparatus for extracting the more delicate odors of the tuberose, jasmine, etc., not subjectable to distillation, by the process of enfleurage, as well as those for making pomades by infusion, were arranged

around the laboratory, and the presses employed to separate the fats after they become sufficiently imbued with the perfume, were seen and examined.

In proceeding to Genoa, the traveller has a choice of routes—by steamer along the coast, or by *diligence* on the Cornéche road, a first class work of great excellence, carried along the base of the maritime Alps, a distance of 127 miles, (time 23 hours). My friends having chosen the former, I entered the coupé of the diligence at 8 o'clock, A. M., and proceeded by the latter route; the road ascends the east side of the valley of the Paillon river until the summit of the ridge is reached 2100 feet above the sea level. The view of Nice and its environs is beautiful in the extreme, and a near approach to many of the beautiful villas and gardens, gave an earnest of what might be seen by a longer opportunity. From this elevated point we could see the steamer, nearly opposite us, beyond the light-house, which did not leave its moorings for an hour after we started, so long had it taken to overcome this great ascent. The town of Monaca was in the distance, and the sea—quiet as a lakelet—spread out before us until it washed the African coast. The scenery along the road, which occupies at some points the site of the via Aurelia, has every possible variety, and the necessity of winding around the rocky spurs of the mountains, causes its course to vary to that of nearly every point of the compass. Towns, villages, walled cities, isolated castles, ancient ruins, together with a wonderful luxuriance of vegetation in many positions, keep the traveller constantly occupied. Many of the villages seem almost cut off from land communication, whilst a few have mountain paths to the interior by the passes above. Few are the acres of arable land, but the centuries of human industry expended along these rocky inlets, have carried the olive and the grape and the fig into every available nook and ledge where a little earth can be sustained by loose stones, until their roots bind all tightly together and repay the labor of the planter during long periods of growth and fruition; indeed, the olive seems adapted by the hand of Providence as the poor man's friend in such situations, and the care taken of the tree shows that the gift is appreciated. At Ventimiglia, a grove of lemon trees was seen, and at Brodighera the date-palm is quite abundant, in fact the Bresca family of this place have long enjoyed the priviledge of furnishing the palm leaves used in Rome in the holy week ceremonies, owing to the fact that one of their ancestors, during the raising of the great obelisk in front of St. Peters by Fontana, made the timely suggestion to wet the ropes to prevent their tension, at the risk of his life, as during the critical moments all the men were ordered to keep silent on pain of death.

The figs of Onaglia are noted for their excellence, and considerable olive oil of good quality is exported from here. At Albenga we caught a glimpse of the hoary head of Monte Viso, near the source of the Po, but night-fall coming on the remainder of our ride was unworthy of note,

until passing Sestri, we soon entered the gates of the natal city of Columbus, and at 7 o'clock were united to our party.

It is difficult to pass by Genoa without dwelling upon its many objects of historical interest, or visible attractiveness, its narrow streets of palaces, marble quays, numerous churches, and antique structures of various kinds. The hotel occupied by us once belonged to the Knights of Malta, and from its watch tower, which yet exists, we obtained a goodly glimpse of city and harbor: but it must suffice to say that we saw three autograph letters of Columbus to the authorities of Genoa at the City-hall, and esteemed them well worth seeing, and also visited the monument to the great navigator, and saw the spot alleged to have been his birth-place. Before leaving we rode out to the Villa Pallavicini to see one of the best examples of ornamental Italian landscape gardening suited to a hillside. We were much gratified, but more especially with the grounds and trees. Among the latter was a cork oak (*Quercus suber*) three feet in diameter, with the bark well developed; a camphor tree (*Camphora officinarum*) two feet in diameter and thirty feet high; a flourishing specimen of bamboo, twenty feet high; sugar cane, bananas, an *Auricaria brazilliensis*, 30 feet high and a foot in diameter; besides many palms—all growing in the open air and soil. The grounds rise several hundred feet to a castellated structure, at the highest point, from which a superb view of the sea and the surroundings is obtained. There is an abundant supply of water brought in from the mountain in the rear, and to the complete command and the judicious use of this important element of fertility, by irrigation, is due the luxurious growth at a time when almost a drouth prevailed. The comparatively level grounds below the villa are devoted partly to an orange grove and flower garden, but mainly to the vine, which is grown on horizontal trellises. As we rode back to the "Croix de Malta," along the extremely dusty terminus of the Corneche road, we could but contrast the paradise we had just visited with the dust-covered foliage and parched aspect of vegetation along the route.

Leaving Genoa on the evening of the 11th of May, in the Italian steamer Principe Amedio, we reached Leghorn to breakfast. The steamer remaining until evening for mails afforded the opportunity to land and visit Pisa. After a hasty ride through Leghorn we called at the water-works to see an admirably arranged filtering reservoir, supplied by an aqueduct from Colognola, enclosed in a building supported partly on columns, standing in the reservoir. The clear crystal water is seen making its way through the gravel beneath as it flows from one apartment to the other previous to distribution. At 12 we set out by rail for Pisa, over a flat, marshy, partially wooded country, with occasional specimens of *Pinus ponderosa*, the seeds of which are used as food. Pisa is a walled city, and the terminus is just with the wall. As our time was limited to a few hours we gave them to the Duomo and its accessories, the Baptistery, the far-famed Campanile, or leaning tower, and the Campo Santo. To the architect the three first

possess great interest, as grand works of his art, representing a type almost peculiar to this region; but, apart from the pleasure always derived from contemplating such objects, our interest in the Cathedral centred in the old hanging lamp or chandelier which centuries back gave to Galileo the idea of the pendulum; and it hangs there yet as it did then! Noble old man! Laborer for the intellectual emancipation not only of Italy but of his race. May the old lamp continue to hang and swing until, under her political Galileo, civil and religious emancipation shall extend through every city and hamlet from the Alpine wall of free Switzerland over the whole peninsula and islands!

We next ascended the tower. A stone dropped from the depressed side, the air being quiet, struck the earth nearly 14 feet from the base, about the alleged inclination of this remarkable structure, which evidently was once perpendicular, as indicated by the stairs and the base. It is 187 feet high and 52 feet in diameter, and seems as firmly bound together as when built. The Baptistery is remarkable for the echo under its dome, and when, rather heretically, we slowly repeated a couplet of one of our national airs, the effect was most strikingly exhibited. The Campo Santo is chiefly remarkable as a relic of the age of the Crusaders, when, under the influence of their initial idea, 53 vessel loads of earth from the Holy City were transported to this vast marble enclosure as a burial place *par excellence* for Christian warriors and pilgrims.

Returning to Leghorn, we re-embarked. Thus far our acquaintance with the Mediterranean had been marked by an uninterrupted calm, but Neptune, well known all along these classic shores, seemed displeased at the tardiness of our offerings, so, in a manner not unusual in this sea, he stirred up the waters until nearly all on board were glad to pay his demands and be quit of his presence. Early on the morning of the 14th we hove in sight of the heights of Ischia, with Cumæ on the east. All were now alert. Steering eastward we passed between the island of Procida and Misenum, and were in the far-famed Bay of Naples. Every spot before us teemed with classic memories. Baiæ and Misenum, the great naval depot of ancient Rome in her height of power, were nearest. Here it was that Pompey's fleet lay when Augustus and Antony went aboard to concert with him the second triumvirate, and all along the top and side of the promontory were the luxurious villas where the patricians of Rome were wont to spend their time. Across the little bay is Pozzuoli, and its ruined temple and amphitheatre, whilst in the back ground Monte Nuovo raises its diminutive head. Meanwhile our good vessel had brought us within view of the cone of Vesuvius, unmarked by even the lightest traces of visible volcanic exhalations, the chiefest point in this cluster of landscape beauty extending from Capri and the heights of Sorrento on the south along the bay shore, where lie Castellammare, Pompeii, Torre del Greco, Herculaneum and Portici, to the outskirts of Naples, not yet visible, behind the promontory of Posilipo. But in half an hour all had been revealed,

and dropping anchor in the commercial port, Naples, rising like an amphitheatre from the waters to the heights of St. Elmo and Capo di Monte, stood before us in all her beauty. During a week's stay we did all that earnest industry could do to acquaint ourselves with the numberless objects of interest presented, visiting Vesuvius, Pompeii, Herculaneum, Pozzuoli, Lake Agnano, the Grotto del Cane, &c., and spent as much time in the Museum, where the spoils of Pompeii and Herculaneum are gathered, as possible. But these things are foreign to this letter, already too much filled with irrelevancies, and the remaining space must be devoted to a few notes on *Pharmacy in Naples*, and other matters.

Previous to the Revolution of 1860 there was an Association or College of Pharmacy in Naples, which, by nine months' study, granted a right to practice Pharmacy, and consequently many persons entered the profession who were unqualified. In 1860 the Government handed the regulation of pharmaceutical education over to the University, which now requires four years' study and practice from the student; but from what I could learn this is more the intention than the accomplished reality. An old law requires that the apothecaries, or dispensers, shall not set up shops within 75 geometrical paces of each other, but without reference to the number of inhabitants. It is the opinion of the better class of pharmaceutists that the number should be regulated by the proportion of inhabitants rather than by distance. In a population of 550,000 there are 230 shops, and among them only about twelve first-class pharmacies. Mr. Kernot (English pharmaceutist and member of the Pharmaceutical Society of Great Britain), of Strada San Carlo, informed me that the English prescription business is chiefly in the spring and autumn. The usage here, as elsewhere, is to return the prescription, keeping a copy. Physicians are required to sign their full name to prescriptions, and the apothecary may refuse to compound them otherwise, and each apothecary has, or is expected to have, a list of physicians' autographs. This rule is, however, constantly overlooked. The usage is to charge for each item in a prescription separately, and as Italian prescriptions are usually very simple in their composition they are not lucrative. An existing law requires that no poison is to be sold without a physician's prescription, and even tartar emetic is included in the list. Ordinary clerks get 60 francs ($12) a month, and apprentices pay a bonus of 300 to 400 francs on entry. There is no chemical or pharmaceutical journal published at Naples, but the "Bulletino Farmaceutica Organico dell'Associazione Farmacetica Lombarda," published at Milan, is taken by some of the pharmaceutists. Previous to 1860 the sciences taught were general chemistry, botany, mineralogy, and materia medica. The new curriculum at the University includes organic chemistry and zoology. I did not learn that practical pharmacy, as a distinct branch, was included. The examination is said to be quite rigid, and the student may obtain his tuition elsewhere if he pleases, provided he can stand the ordeal.

When at the crater of Vesuvius a number of men were engaged just within the southern edge, gathering sulphur into bags, which, when filled, are strung across a pole and carried by two men to the place of descent on the northern edge; there they are dragged down on the volcanic ashes and, at the base of the cone, are loaded on mules, panier fashion, and transported to the coast. On inquiry it proved to be very impure, and used only for the vine disease, *Oidium Tuckeri*, for which sulphur appears to be the best remedy. The best sulphur used here comes from Sicily. Olive oil is made at Sorrento and other places near, but the greatest production is at Otranto and Bari, to the south-east, and especially near Gallipoli. The annual product of Southern Italy is about 35,000 tuns. It is said that about two-thirds of the soil in the previous named districts is devoted to the olive. It is propagated several ways, but most successfully by slips grafted on the wild olive, requiring ten years to come in bearing, and then, with care, lives centuries. The tree blooms in June, and ripens from October to December. Mr. Kernot gave me a specimen of very good fat manna, produced at Salerno, within fifty miles of Naples, and says that flake manna, small and large, comes from Sicily, but large quantities of inferior grades are produced in Southern Calabria, and probably enters commerce through Messina as Sicilian. The finest is obtained on the mountain side near Corigliano. Oil of oranges and lemons, I was informed, is made in Calabria and Sicily, in three ways: 1st, by scraping off the exterior cellular tissue, and expressing the pulpy mass. 2d, by grating off the rind, pouring on it hot water, which causes the oil to separate and rise. The pulp is then depressed beneath the surface, and the oil, after it collects, is skimmed off. 3d, by distillation. When at Cork, Mr. Frank Jennings informed me, on the authority of Mr. John A. Dix, of New York, that the best Sicily oil is obtained by dextrously wringing the rind of the orange so as to rupture its oil cells and cause their contents to spirt out, the operator holding the orange within a cask. As the drops accumulate they run down the sides, and gather at the bottom, unmixed with any foreign matters. At Naples this new process was wholly unknown. Liquorice is not grown for commerce near Naples, but 80 miles south, in Calabria. Mr. Kernot says that the brand most esteemed there is *Corigliano*, some of which, of superior quality, he gave me; then *Campagna*, *Sallugra* and *Barraco*. These are the family names of the large proprietors. Perhaps the most is grown on the east coast of Calabria, as at Cotorne Baron Campagna alone is said to make liquorice paste to the value of two millions of ducats annually, whilst the estates of the Barraco family are said to yield $750,000 annually. I have observed the fact in New Jersey, that the horizontal roots of liquorice keep below ordinary garden cultivation, and after the ground is laid out for vegetables the annual shoots appear at random in the beds. In Calabria the ground is given at the same time to wheat and other grains. The liquorice, being below the plow, is not injured, and, as it requires several years to attain its proper magnitude,

the annual shoots are cut off with the grain, or avoided by the reapers, according to the manner of gathering the cereals.

Among the staples of Southern Italy is argols, and is generally the red variety, as the grapes are usually fermented with their skins. Mr. Kernot said that at almost any time one might buy 1000 casks of tartar, of 1200 lbs. each, in the Neapolitan market. Both sweet and bitter almonds are largely produced on the east coast, in the Bari district, whilst saffron (*Crocus sativus*) grows wild in the pasture region of ultra Southern Italy, and is collected to some extent for commerce in districts near Taranto.

We should not leave Naples without saying that we visited the apothecary shop at Pompeii, and stood behind its earthen counter; and, in the *Museo*, saw some of the implements used therein for making pills—a tile and spatula, with a pill box containing some remains of Pompeian skill—certainly the oldest existing samples of fossil pharmacy out of Egypt.

The trip from Naples to Rome is comfortably made by rail in 9 or 10 hours, passing through Caserta, Capua and Frosinone, and winding around the southern side of the *Alban Hills*, the train soon brought us in sight of the dome of St. Peter's, which towers more than three hundred feet above the highest of the Seven Hills in Rome, and after sweeping along nearly parallel with miles of ruined remains of Roman aqueducts, we entered the Eternal City.

Pharmacy in Rome.—The municipal laws of Rome require that the pharmaceutist should be educated before he enters into the practice of his art. To provide for this education there are lectures on materia medica, botany, pharmacy and chemistry, with which are connected two examinations. Beginners enter as apprentices, and pay a bonus or entrance fee of from 200 to 400 dollars, previous to which there is a preliminary examination of the applicant as to his fitness for the business. The tuition at the University appears to be part of the medical system, and not distinct and separate for pharmaceutists alone. There are some accomplished pharmaceutists in Rome, but many who are of but medium grade. Mr. Sinimberghi (member of the Pharmaceutical Society of Great Britain) informed me that there is no society of pharmaciens in Rome for scientific advancement, all depending on individual action, or through the faculty of the University. The law is strict that the apothecary must be examined, but is not always carried out to the letter. The law regulating competition apportions a shop to every 3000 inhabitants. Physicians write their prescriptions both in Latin and Italian. In dispensing prescriptions, the original is always given back to the patient, a copy being taken, and the prescription usually in the best stores is stamped with the proprietor's seal. The best stores are careful in dispensing and labelling their preparations and prescriptions, but a great many shops do it carelessly, and often neglect it entirely. There is no law regulating the sale of poisons by apothecaries, except that which requires that no poison be sold without a physi-

cian's prescription, and this appears to be closely adhered to, as few cases of poisoning occur. On inquiring what cognizance the law took of errors on the part of apothecaries, my informant knew of no cases of prosecution for that cause. There is in Rome an association of pharmaceutists, a sort of joint-stock company, embracing fifty eight members, which carries on a wholesale drug and importing business, for the supply of the members and others, any profits in the form of dividends accrueing to the members. There is no chemical manufacturing establishment in Rome, all chemicals being imported except such as are made by individuals for their own supply. There is no stamp duty on proprietary medicines, the only duty they pay when imported being customs. Physicians are prohibited by law from practising pharmacy or keeping shops. There is no unity of action among the pharmaceutists of Rome for professional or scientific improvement, and no combination of any kind except the joint-stock company before noticed. Clerks receive but small salaries, few over 300 dollars per annum, and, as near as a very limited inquiry would go, the prices charged for medicines are moderate. Citrate of magnesia and carbonic acid water are in general use, and the pharmaceutists sell many fancy articles not strictly within the line of Pharmacy. W. P., Jr.

ON THE POISONOUS COMPOSITION OF THE "MOTHER OF PEARL" ADDRESS OR VISITING CARD.

Munich, Bavaria, Nov. 24th, 1867,
Dr. G. C. Wittsteins, *Analytical Chemical Laboratory.*

To the Editor of the Am. Journal of Pharmacy.

Esteemed Sir:—A novelty in way of a visiting card appeared in the States during the early part of the present year, (1867,) which from its resemblance to *Mother of Pearl*, by its crystallized surface, was much admired, and was largely used. This same curiosity has of late been introduced in this city, and I am informed by a dealer that the demand is greater than the supply. Several days ago one of these crystallized cards was brought to the laboratory by the Medical Director of the Sanitary Department of Munich, requesting Prof. Wittstein to give his opinion in relation to the composition of the crystallized surface. The professor, after applying the necessary tests, pronounced it a soluble *salt of lead.*

A quantitative examination which I made of such a card, $2\frac{1}{4}$ inches wide, and 4 inches long, weighing $33\frac{1}{4}$ grains, yielded as its crystallized coating 6·6015 grains of Acetate of Lead. The consideration which prompted me in addressing you on this subject, it not being, strictly speaking, of Pharmaceutical interest, was to call attention to a matter of more consequence than may at first sight appear. The public not being acquainted with the poisonous properties of these cards, will not be on their guard in preventing their being chewed or eaten by small children,

to whom the *sweet taste* (of the lead salt) and the crystallized appearance will form an attraction, thereby producing obscure cases of illness and poisoning. The inventors of such deleterious articles deserve, if not punishment, public censure for thus placing the health of human beings in jeopardy.

The manufacture and sale of these cards in this city has been forbidden by law.

Yours most respectfully,

ALBERT E. EBERT.

GELSEMINUM, *versus* JASMINUM.

BY THE EDITOR.

In the Chicago Medical Journal, Dr. Jonathan W. Brooks, after referring to the notice of the yellow jasmin in the United States Dispensatory, 12th edition, by Dr. Wood, *gravely* enumerates a list of works from Dioscorides down to the London Dispensatory of 1811 as authorities on the subject, calls in question the authorities of Dr. Wood, and winds up with the following paragraph:

"The apparent necessity of thus noticing the above article in the writings of so indefatigable, excellent and earnest a worker in the cause of medical science is to be regretted" (!).

The learning of Dr. Brooks has for this once, at least, proven false to him. The learned old Greek wrote about many things, some of which it is difficult now to recognize, but he never wrote about or heard of the *Gelseminum sempervirens* of our Southern States, which no doubt flowered and evolved its fragrance in the days of Nero, as it does now; but Nero's galleys never crossed the Atlantic to bring that wise physician this valuable American plant. The fact is, Dr. Brooks confounds the so-called yellow jasmin, *which is not a jasmin at all*, with the *Jasminum officinale*, and in this he has been misled by the fact that the generic name given to the yellow jasmin—Gelseminum—is one of the ancient names for the true jasmin, and possibly that under which Dioscorides described it.

The yellow jasmin of the South, though long known to botanists as a beautiful and fragrant climber, only recently became known as a powerful medicinal agent, used in irregular practice before it was employed by physicians.

GLEANINGS FROM GERMAN JOURNALS.

By J. M. Maisch.

Gummi-resina myrrhæ.—Dr. E. G. Brückner has subjected myrrh to an analysis, from which we report the following results:

Constituents soluble in water,	67·7500
Resin insoluble in ether,	4·8106
" soluble "	12·5682
" " in bisulphide of carbon,	14·0606
Matter soluble in alcohol and water,	0·4318
Insoluble (sand, bark, &c.),	0·3788
	100·0000

The matter soluble in water consists of 51·11 mucilage, precipitable by acetate of lead, and 16·64 arabin.

The tincture of myrrh has a slight acid reaction. If the precipitate by acetate of lead is decomposed by HS, a minute quantity of an acid is obtained, which is soluble in water and precipitated by lime water; the sulphide of lead retains a red-colored resin. The filtrate from the above lead precipitate contains a compound of lead with resin, which is soluble in alcohol.

The portion of resin soluble in bisulphide of carbon has the consistence of honey, and is inclined to crystallize; it contains 75·62 C, 9·54 H, 14·840.

The resin, which is insoluble in bisulphide of carbon, but soluble in ether, dissolves also in chloroform, separating a little fat-like matter. In the dry state it resembles rosin in appearance, and contains 57·485 C, 6·616 H, and 35·899 O.

The oil of myrrh was not obtained in sufficient quantity to ascertain its composition.

The author also compares his results with those obtained by Ruickholdt, which differ from his.—*Buchner's N. Repert.* 1867, 76–87.

Solubility of silicic acid in ammonia. Richard Pribram has investigated this behavior and found that SiO_3 is taken up by ammonia in the following proportions: natural anhydrous requires 6000, artificial anhydrous 260, hydrated dried 330, gelatinous 140 parts liquor ammoniæ of 10 per cent. Exposed to the air NH_3 evaporates, and finally a clear solution of NH_4O, $4SiO_3$

remains. By boiling about 19-20ths of the remaining ammonia is expelled, and the clear solution contains about 80 SiO_3 to $1NH_3$. Dried at ordinary temperature the residue has about the same composition, but water takes up mere traces of it. The results give a hint of the manner in which silica may be administered internally, and how plants most likely take up this compound. (Wittst. Viertelj. 1867, 30—41).

Sulphite of magnesia. J. C. Sticht mixes concentrated warm solutions of sulphite of soda and sulphate of magnesia; the crystalline magma is expressed and dried. (Ibid 49).

Sulphocyanide of ammonium. J. C. Sticht fuses 2 parts dry ferrocyanide of potassium with 1 of sulphur, dissolves in water, filters, boils with solution of carbonate of potassa, filters, evaporates to 30° B., when it contains 46 per cent. sulphocyanide of potassium, and adds to 19 parts of this solution 9 parts pure sulsulphate of ammonia dissolved in water. Sulphate of potassa crystallizes out; the filtrate is mixed with twice its volume of strong alcohol, the precipitate separated, the alcohol distilled off, the residue diluted with water, decolorized with animal charcoal and evaporated to crystallize. (Ibid 48).

Tinctura Rosæ centifoliæ. J. B. Enz calls attention to Kastner's observation that the brownish yellow tincture is colored rose-red by acids, and greenish yellow by alkalies; the beautiful odor becomes apparent on diluting it with 16 to 20 parts water. It contains 4·8 per cent. solid ingredients, which after evaporation have lost their behavior towards acids and alkalies. It contains potassa, lime, magnesia combined with malic, tartaric and phosphoric acids, tannin, fat, resin, red coloring matter, bitter principle, sugar and volatile oil. (Ibid 53—56).

Cochineal. E. Dietrich found that select Honduras cochineal yields, after deducting carbon, 3·211 per cent. ashes, consisting of NaCl ·506, NaO 13·404, KO 18·630, CaO 2·404, MgO 6·437, Al_2O_3 1·390, Fe_2O_3 1·152, PO_5 47·951, SiO_3 7·923. (Ibid 57).

Carbolic acid, according to Parisel (Annuaire, 1866), like creasote from beechwood tar, does not possess the property of crystallizing; the commercial crystallized article is obtained by the addition of a little naphthalin. (Ibid 125).

ON THE USE OF BENZOIN IN OINTMENTS.

By Thomas Doliber.

In 1865 I accepted the query in regard to benzoinated lard. The query consisted of three distinct clauses, of which the first, as to the best process of benzoinating lard, was answered in a paper read before the Association last year, (see Proc. Am. Pharm. Ass. 1866, p. 224.) Continued experience has confirmed me in the belief that the formula there given is at least as good as any that has been made known. Having been told, however, by one or two persons that they were unsuccessful in preparing benzoinated lard by that formula, the preparation sometimes having a yellowish tinge, I would say that the tincture should always be made from the best selected benzoin; the lard should be obtained in the "leaf" and rendered in the laboratory. Lard as found in the markets will not always answer the purpose, having been improperly prepared.

An attempt was made to answer the second clause, in regard to its use in mercurial ointment, which was only partly successful, the ointment not having been made long enough to become rancid. In June, 1866, three portions of mercurial ointment were made. At the end of 14 months they are found in the following condition: the first, made in accordance with the formula of the Pharmacopœia, is thoroughly rancid. The second, in which the ointment of benzoin of the Pharmacopœia was substituted for lard, is rancid, but somewhat less so than the first. The third, in which benzoinated lard was used instead of lard, still remains *perfectly sweet and unchanged.* These ointments have been exposed to the air, although covered lightly with paper, on a high shelf in a warm room during the winter, and at the ordinary temperature during the summer, as have also all the cerates and ointments experimented upon which are mentioned in this paper.

So far as I have been able to learn, it is the universal opinion of those physicians who have used the benzoinated ointments, that their medicinal properties are not injured, but are improved by the process. Especially is this the case with benzoinated ointment of oxide of zinc, which has been used for the past ten years in this city to a very considerable extent, and the use of

which has with some physicians almost entirely superseded that of the officinal ointment.

Some attempt has been made to answer the final clause, as to the other ointments in which this form of lard may be advantageously used.

From the list of cerates and ointments of the Pharmacopœia, the following 17 were selected for experiment, as being most liable to rancidity.

Ceratum Adipis.
" Cetacei.
" Plumbi Subacetatis.
" Zinci Carbonatis.
Unguentum Acidi Tannici.
" Adipis.
" Antimonii.
" Aquæ Rosæ.
" Hydrargyri Ammoniati.
" " Nitratis.
" " Oxidi Rubri.
" Iodinii.
" " Compositum.
" Plumbi Carbonatis.
" Potassii Iodidi.
" Sulphuris Iodidi.
" Zinci Oxidi.

In all of which the benzoin could be introduced by means of the benzoinated lard, except the three following—ceratum cetacei, ceratum plumbi subacetatis and unguentum aquæ rosæ. After numerous experiments, the following formulas were adopted for them.

CERATUM CETACEI.

Take the quantities of the ingredients in the formula of the Pharmacopœia, melt as directed and stir the mixture constantly; when nearly cold, add two and a half fluidrachms of tincture of benzoin* and stir the mixture until cold. It is well known

*_Tincture of Benzoin._

Take of benzoin, in coarse powder, six troyounces. Alcohol, one pint. Macerate the benzoin with the alcohol until it is dissolved; then filter through paper.

that this cerate, when made by the officinal formula, is very liable to rancidity, but a portion made by the above formula on Feb. 20, 1867, still continues perfectly sweet and unchanged.

CERATUM PLUMBI SUBACETATIS.

Take of solution of subacetate of lead, two fluidounces and a half.

White wax, four troyounces.

Olive oil, eight troyounces.

Camphor, thirty grains.

Tincture of benzoin, four fluidrachms.

Mix the wax previously melted with the oil; then gradually pour in the solution of subacetate of lead, and when the mixture becomes melted remove it from the fire and stir it constantly with a wooden spatula until it becomes cool. Lastly add the camphor dissolved in the tincture of benzoin and mix them.

This cerate, when made by the officinal process, is extremely liable to become rancid, and is perhaps the most difficult of all the cerates and ointments to keep unchanged; a portion made by the above process in August, 1866, was found, in May, 1867, to be perfectly sweet and soft, and unchanged in every respect. It was, however, at that time stirred up and exposed more thoroughly to the air, and at the present time, although it continues sweet and soft, it has become slightly discolored on the surface.

The cerate made by this process is of the same color as that made by the officinal process when recent, that is, not perfectly white; the former retains its color; the latter becomes whiter in proportion as it becomes rancid.

UNGUENTUM AQUÆ ROSÆ.

Take of ointment of rose water, 16 troyounces.

Tincture of benzoin, 4 fluidrachms.

Rub them together until they are thoroughly mixed. This is another ointment very liable to become rancid by age; a portion benzoinated by the above process in Feb., 1867, still continues perfectly sweet, although slightly granular on the surface.

Ointment of rose water, unless very carefully prepared, cannot be benzoinated by this process. The vessel in which the ointment is made should be kept in the water-bath until the mixture

becomes fluid after adding the rose water; it should then be removed and the mixture stirred constantly and rapidly until it becomes cool. In making six or eight times the quantity of the formula of the Pharmacopœia, it will require from four to six hours faithful stirring.

The results of the experiments upon the other ointments and cerates are presented in the following table: ointment of red oxide of mercury having been experimented upon previously, and the results stated in a former paper is omitted here. Ointment of oxide of zinc was not experimented upon, as from long experience I have never known the benzoinated preparation to change, while it is well known that the officinal ointment very soon becomes rancid.

In the column of names the figures have reference to the different processes employed; 1 meaning the officinal; 2, that in which ointment of benzoin (U. S. P.) was substituted for lard, and 3, that in which benzoinated lard was substituted. The first three preparations in the table are made by the formulas given above.

Name.	When made.	Age.	Condition in August, 1867.
	1866.	mos.	
Cer. Plumb. Sub.	Aug. 28	12	Sweet, discolored slightly on surface.
	1867.		
" Cetacei.	Feb. 20	6	Sweet.
Ung. Aq. Ros.	" 22	6	Sweet, slightly granular on surface.
Cer. Adipis 1	Apr. 1	4	Sweet and smooth.
" " 3	June 10	2	Sweet and smooth.
" Zinci Car. 1	May 25	3	Smooth, slightly rancid.
" " 3	" 25	3	Sweet and smooth.
Ung. Acid. Tannic. 1	" 22	3	Spongy and granular, rancid.
" " " 2	" 22	3	Granular, rancid.
" " " 3	" 22	3	Sweet, slightly granular.
" Adipis 1	Apr. 1	4	Sweet and smooth.
" " 3	May 23	3	Sweet and smooth.
" Antim. 1	" 24	3	Spongy, rancid.
" " 3	" 24	3	Spongy, sweet.
" Hyd. Ammon. 1	" 24	3	Granular, slightly rancid, yellowish.
" " " 3	" 24	3	Sweet and smooth, white.
" " Nit. 1	Apr. 1	4	Color mottled green and yellow, sweet.
" " " 3	May 31	2	Smooth and even in color, sweet.
" Iodin. 1	" 20	3	Granular, no smell of iodine.
" " 3	" 15	3	Granular, slight smell of iodine.
" "Co. 3	" 20	3	Granular, slight smell of iodine.
" Plumb. Carb. 1	" 25	3	Sweet and smooth.
" " " 3	" 25	3	Sweet and smooth.
" Pot. Iod. 1	" 20	3	Yellow, granular, separated, smell of iodine.
" " " 2	" 22	3	Yellow, granular, odor good.
" " " 3	" 20	3	Sweet, color unchanged.
" Sulph. Iod. 1	" 22	3	Crust on surface, odor good.
" " " 3	" 22	3	Crust on surface, odor good.

The experiments were interesting in the case of ointment of nitrate of mercury; that made with benzoinated lard remained unchanged in color, odor and consistence. In making the ointment of iodide of potassium with ointment of benzoin (U. S. P.) the color changed rapidly to yellow during the process of making it.

In some of the cases mentioned in the table, sufficient time has not elapsed to test them properly, and in the iodine preparations the experiments are not conclusive.

When it is considered that the exposure to air and temperature to which these cerates and ointments were subjected, was very much greater than they would ever be likely to receive at the hands of the apothecary, it will be conceded that the experiments were very satisfactory, and that the remark made in a former paper can be repeated here, that "there is no doubt that the benzoinated lard can be used in many of the ointments of the Pharmacopœia, without affecting their medicinal qualities."

Boston, August, 1867.—*Proc. Amer. Pharm. Assoc.*, 1867.

ON COMPOUND DECOCTION OF SARSAPARILLA, U. S P.

By William Saunders.

Query 6.—Is the direction in the formula for compound decoction of sarsaparilla, U. S. P., to macerate the ingredients in cold water for twelve hours previous to ebullition, sufficiently important to justify the delay it occasions? and will not digestion at 200° F. for two hours be a judicious alteration?

The first step taken in collecting material for a reply to this query was the preparation of the officinal decoction. One-fourth of the quantity ordered in the Pharmacopœia was made at a time, containing sarsaparilla root cut into short pieces, and bruised by passing it coarsely through a Swift's drug mill. One and a-half ounces bark of sassafras root, bruised; liquorice root, bruised, and guaiacum wood, rasped, of each a quarter of an ounce; mezereon bark, cut into small pieces, forty grains. These ingredients were macerated in cold water for twelve hours, then placed on the fire and boiled for a quarter of an hour, small quantities of water being added from time to time to make up the loss by

evaporation. The resulting liquid was strained through a fine brass sieve, and the materials squeezed with the hand to express as much of the liquid as possible. Cold water was added to the ingredients, and pressure applied as before, until a pint was obtained. This was set aside for about twelve hours, when the liquid was carefully decanted from sediment,—the last portion, containing whatever may have been precipitated, being thrown on a filter, and when all had passed through, the filter was washed with a small qantity of water, so that none of the soluble matter might be lost.

Ingredients similar in quantity, quality, and mode of preparation were used in all the subsequent experiments, and the same process of pressing the decoction and washing the materials followed.

In the next experiment, the ingredients were macerated at 200° F. for two hours.

Endeavoring to ascertain whether the time occupied in preparation might be shortened still further, another portion was macerated at 200° F. for one hour, and in the fourth experiment at the same temperature for half an hour.

The fifth experiment consisted in macerating the ingredients for one hour in cold water, then boiling for fifteen minutes, as in the officinal decoction; and the final operation simply boiling the ingredients for fifteen minutes, without previous maceration.

The liquid resulting from the sixth experiment was deficient in color and strength, but the other five samples were almost identical in appearance and taste. The officinal and No. 5 seemed to have a little stronger flavor of sassafras than the other three, but the difference was very slight.

One-half the quantity of decoction obtained from each experiment was evaporated to a solid extract, of pilular consistence. These experiments were twice repeated, and I now give the average results in each case:

No. 1, the officinal decoction, yielded 154 grains to the pint.
No. 2, macerated at 200° F. for two hours, 158 grains.
No. 3, macerated at 200° F. for one hour, 143 grains.
No. 4, macerated at 200° F. for half an hour, 148 grains.

No. 5, macerated in cold water one hour, boiled 15 minutes, 138 grains.

No. 6, boiled 15 minutes without previous maceration, 130 grs.

That No. 4 should yield an average of 5 grains more extract than No. 3, although macerated for a shorter time, is strange, and can, I think, be best accounted for by supposing some difference in quality in the materials used, which escaped observation, —probably in the liquorice root. In both experiments the yield was in excess of No. 3.

The results may thus be summed up: No. 2 yields four grains more of extract to the pint than the officinal decoction, and is made in two hours,—one-sixth of the time. No. 3, eleven grains less than the officinal; time, one hour. No. 4, six grains less; time, half an hour. No. 5, sixteen grains less; time, one and a quarter hours. No. 6, twenty-four grains less; time, fifteen minutes.

The difference of yield is very slight, even when the time is reduced to an hour or half-hour. I can see no reason why, in a future revision of the Pharmacopœia, the time should not be shortened; doubtless every pharmaceutist who has been in the habit of following the directions at present given, would hail the change with pleasure.

Samples of the decoctions are here submitted for inspection. —*Proc. Amer. Pharm. Assoc.*, 1867.

ON HONEY AND ITS ADULTERATIONS.

By Jervis W. Colby.

Query 8th.—For some years past commercial honey has frequently been a subject of adulteration. What is the present condition of the trade in this article, foreign and domestic, and what are the adulterations made?

Of foreign commercial honey, West India alone is brought to this market, principally from Cuba and St. Domingo. It is always strained and, of the two, St. Domingo is the lighter, both in color and body; they rate about the same, if anything, St. Domingo is a little the higher. The principal consumers are brewers, not only in this country, but it is exported from this port to Europe, mostly to Germany.

It is now quoted at 57 @ 60 cts. gold per gallon, in bond, 80 @ 85 cts. gold or $1.15 @ $1.25 currency, duty paid; the duty 20 cts. per gallon.

Domestic honey is now, for the greater part, furnished by the northern States, although there is some southern honey in the market. There is not the organized trade in domestic that exists in West India, and no domestic is exported.

The market for all kinds of honey is at present poorly supplied, it being in advance of the season.

Adulterations.—In foreign and home publications, in which I have found articles on the subject, a great variety of adulterations are mentioned, among which are cane sugar, different forms of starch, chalk, plaster of Paris, pipe clay, gypsum, &c., &c. The largest dealers in foreign honey claim to know no such thing as adulterated Cuban honey, and, after examining many specimens, I have not found one adulterated.

The same cannot be said of domestic, which is occasionally adulterated with some form of starch, to increase bulk and weight, also to improve the color and to correct any acidity it may have acquired. But cane sugar as syrup is almost the only adulteration made use of; this is not uncommon in domestic, and is found in almost all proportions, from an entirely fictitious article down, a favorite plan being honey 4 parts, white sugar 3 parts, water 4 parts; heat. It is customary to flavor both, fictitious and adulterated, with peppermint.

The presence of either cane sugar or starch is readily shown, and aside from these I think we need not mistrust that our honey is adulterated.—*Proc. Amer. Pharm. Assoc.*, 1867.

ERGOT.

By James W. Mill.

Query 16.—Can the existing pharmaceutical preparations of Ergot be improved, if studied in the light offered by W. T. Wenzell, and can a solid permanent preparation of Ergot be made, representing its alkaloids in a solid form?

The officinal preparations of Ergot are the wine and fluid extract. The wine is obtained by simply percolating the drug with sherry wine, and the desired result is well enough attained

by the formula as it is. The more important preparation—the fluid extract—is made by exhausting sixteen troyounces of Ergot with diluted alcohol acidulated with acetic acid, reserving the first twelve fluidounces of the percolate, evaporating the remainder to four fluidounces, mixing the two solutions and filtering. According to the investigations of Mr. Wenzell, ergotic acid—the organic acid of Ergot, with which its alkaloids mostly are combined—is volatile. Viewed in the light of this fact, the propriety of using an acidulated menstruum in the preparation of the fluid extract is apparent, and I do not see that, pharmaceutically, the formula can be improved. I can only suggest an economical modification of it, as follows:

Take of Ergot, finely ground, and as much of it as possible passed through a No. 60 sieve, sixteen troyounces.
Water, acidulated with acetic acid in the proportion of two fluidrachms to the pint, a sufficient quantity.

Moisten first the fine powder with the menstruum and pack it in a glass percolator with moderate pressure; in the same way treat the coarser powder and proceed with the percolation till three pints have been obtained; evaporate this on a water bath to twelve fluidounces; mix with it four fluidounces of alcohol and filter. In this process it will be observed that only the preservative influence of alcohol is called into requisition—the extraction of the drug being accomplished wholly by means of the acidulated water. A saving of nearly a dollar a pint is thus effected, and without, I think, any detriment to the therapeutic value of the preparation, for, as is well known, water is a complete solvent of the active principles of Ergot, and, though water alone cannot be used as a menstruum on account of the ready decomposition of a purely aqueous solution, yet, when the water has been previously acidulated, the stability of the percolate is insured for a period long enough to permit its concentration and subsequent admixture with alcohol, after which its permanence is secured. It would be prudent, however, to prepare the yearly supply during the cold weather of winter, as then all risk of loss would be avoided. The preliminary extraction of the fixed oil, aside from facilitating the pulverization of the drug, does not seem to be otherwise of advantage. Properly packed, the percolation

proceeds slowly and regularly, and when three pints shall have passed the drug will be found practically exhausted, the last portions of the percolate giving only a slight precipitate with solution of acetate of lead or solution of bichloride of mercury and bicarbonate of potassa. Thus prepared, fluid extract of Ergot is a thin, dark colored liquid, and, though not entirely freed from inert matter and containing only one fourth of its bulk of alcohol, keeps well. Gently heated with a slight excess of potassa, propylamia is freely evolved.

Ergot is chiefly employed to facilitate parturition, by its power of promoting uterine contraction. For this purpose, and also in the treatment of other complaints where the use of Ergot is indicated, the fluid extract forms a convenient and ready means of administering the drug, and, it seems to me, satisfies every therapeutic requirement. If desired, however, an efficient solid extract could be prepared by exhausting the Ergot with acidulated water; evaporating to a syrupy consistence; precipitating the albumen, etc., with alcohol; filtering and again evaporating to a proper consistence.

ON CUBEBIN AND THE DIURETIC PRINCIPLE OF CUBEBS.

By F. V. Heydenreich.

"To what constituent or constituents does cubeba owe its diuretic power? and what relation does cubebin hold to the soft resin and volatile oil in the therapeutic action of the drug?"

The oleo-resin of cubebs is generally regarded as containing all the remedial properties of the drug. In order to answer this query, it was necessary first to prepare the oleo-resin, and then to separate the various substances contained in it. To this end 80 ounces of cubeb berries were taken, reduced to fine powder, and then subjected to the action of ether, for the purpose of obtaining the oleo-resin. The quantity thus obtained was 19 oz., or nearly 24 per cent. The oleo-resin was then subjected to distillation with water, to separate sufficient volatile oil for experiments, and afterwards heated on a water-bath, to drive away the remainder of the volatile oil. The loss of weight by this operation was 10 ounces and 7 drachms, showing the presence of this amount of volatile oil, or a little over 13 per cent., and leaving

as residue the soft resin, cubebin and wax, amounting to 8 oz. and 1 drachm. A portion of this was reserved for experiments, and the remainder mixed with a small portion of ether and set aside to facilitate the deposition of cubebin and wax.

Experiments were first made with the volatile oil. This had a light straw color, and had to a much greater extent the odor of the drug than the green commercial article. It was tried as follows:—

Case No. 1. Three minims were given every two hours, for 10 hours, without any appreciable effect.

Case No. 2. Ten minims were given every two hours, for six hours. The effect in this case was a slight feeling of warmth in the region of the stomach, which was slowly diffused through the body, but no appreciable increase of urine could be noted.

Case No. 3. Ten minims were given every hour, for 12 hours, with a view of obtaining the constitutional effects of the oil on the system. No increase in the amount of urine could be noticed, but great inward heat was felt, amounting almost to fever. These unpleasant symptoms passed off during the following day.

Cubebin was experimented with next. By repeated crystallizations, it had been obtained perfectly pure, in white silky needles, tasteless and odorless.

Case No. 1. Ten grains were administered every hour, for six hours, without producing any effect on the system whatever.

Case No. 2. Ten grains were administered every hour, for 12 hours, and this was followed by a dose of 30 grains, without producing any effect whatever.

The soft resin had the consistence of honey, of a dark olive-green color, with some odor yet of cubeb. It was tried with the following results:—

Case No. 1. Ten grains given every two hours, for six hours, acted the following morning as a slight purgative. The urine acquired a peculiar odor, reminding one somewhat of the drug, but no increase in the secretion of urine could be noticed.

Case No. 2. Sixty grains were taken in two doses, at an interval of three hours. This acted as in the preceding case, but was accompanied by a considerable increase of urine.

Case No. 3. One hundred grains were given in five doses, at intervals of two hours. This did not operate on the bowels, but produced a considerable increase in the secretion of urine, accompanied by a slight burning sensation during the passage, which passed off with the effect of the medicine.

Case No. 4. Two drachms were taken in six doses, at intervals of two hours. This caused no increase in the secretion of urine, but, acting as an irritant, produced very decided irritation during the passage of urine, together with a very considerable increase of heat over the body.

From these experiments, though they are perhaps too few to settle the points definitely, it would appear—

1st. That the diuretic properties of cubeb reside in the soft resin;

2d. That cubebin, as compared with the other constituents of cubeb, is inert;

3d. That the volatile oil acts as a carminative and stimulant, producing, in large doses, the unpleasant effects produced by other volatile oils having similar properties.

ON SYRUPUS SENEGÆ.

By C. Lewis Diehl.

In the history of pharmacy, the present may be called the era of pharmaceutic specialities. Physicians and pharmacists are not satisfied with the production of medicines that will produce the desired therapeutic effect, but it has also become necessary to please the eye with the form, color or brightness of the preparation. It, unfortunately, too frequently happens that, in order to produce a clear solution, tincture, syrup or other preparation, a portion of its activity is sacrificed; but this is a matter of indifference (when not attributable to ignorance) to the pharmacist preparing, or the physician prescribing it, provided only that the fancy of the patient be pleased. There doubtless exist many preparations, however, that can be improved in appearance without injury to their therapeutic action, and to these perhaps syrup of seneka belongs; but such improvement should be submitted to the approval of a body of scientific men, who

are qualified to judge of its value. These considerations doubtlessly prompted the Committee on Scientific Queries to originate Query 9, which I had the honor to accept at the last meeting.

The remedial properties of seneka appear to reside chiefly in the polygalic acid (senegin); the volatile principle, virginic acid, and a bitter coloring matter probably also contribute to its activity, while the other constituents—tannic acid, gum, pectic acid, albumen, cerin and fixed oil—contribute but little if any to its medicinal powers. The problem to be solved appears, therefore, to be the embodiment of the three first mentioned constituents in the form of syrup, and if the stability of the preparation demands, to sacrifice one or all the others. The virtues of senega being, according to various authorities, readily extracted by cold or boiling water, and diluted or strong alcohol, it remains to be determined which of these, or in what manner they are best applied to the extraction of the above mentioned active principles, without extracting the inert principles favoring decomposition.

Accordingly a number of syrups were prepared with different solvents, and each syrup was divided in 3 vials, two of which were carefully sealed, the other loosely corked. One of the sealed vials was kept in a cool cellar, and the portion thus preserved designated *A;* the other was kept in the store room, exposed to all the variations of temperature, and is designated *B;* the loosely corked vial was also kept in the store room and occasionally opened, so as to represent as nearly as possible the condition it would be under in the dispensary; this was designated *C.*

I. Syrup prepared September, 1866, according to the formula of the U. S. Pharm. Not clear when first made; remained unchanged up to date; no precipitate formed; somewhat more viscid than would be warranted by the amount of sugar contained in it; of a color, taste and odor indicative of good syrup of seneka.

II. Syrup prepared October, 1866, like I, differing only in using but 14½ oz. of sugar to 8 fluidounces of liquid, instead of 15 oz. required by the Pharm. formula. Not clear when first made, but when allowed to stand a few weeks formed a bulky deposit, which when last examined was disseminated through about

one-fourth the liquid, leaving the supernatant portion perfectly clear, limpid, and of a red-brown color. In odor and taste it corresponded with I and kept very well.

III. Syrup prepared February, 1867, like II, with which it corresponded in appearance and properties, with the exception that *C* had formed a small amount of mould on its surface during the summer months.

IV. Syrup prepared in September, 1866; the root was extracted with a menstruum of 3 measures of alcohol 0·835 to 2 measures of water; otherwise the officinal directions were followed. In appearance and properties it corresponded most closely with I, like which it has formed no deposit up to date. The portion *C*, however, formed a small amount of mould, somewhat more abundant than III.

V. Syrup prepared in September, 1866, differing from the officinal by the use of a menstruum of 2 measures of alcohol 0·835 to 1 measure of water. It was not clear, and shortly a flocculent matter separated and rose to the surface in *B* and *C*, which otherwise kept very well; *A* remained uniform. This syrup was of a brown-red color and did not differ materially in taste or odor from I.

VI. Syrup prepared in February, 1867, differing from the officinal by the use of alcohol 0·835 as menstruum. It was of a light yellow color, not quite clear, and formed a flocculent precipitate on standing a few days. In odor and taste it was decidedly inferior to the previous lots.

VII. Syrup prepared in February, 1867, in the officinal proportions, by exhausting the root by displacement with cold water, evaporating to the consistence of a thin extract, which was exhausted with cold alcohol 0·835, the alcoholic tincture evaporated to expel alcohol, the residue taken up by water in the proper proportion and converted into syrup. This formed a beautiful clear syrup, of a red-brown color, limpid and permanent. In odor it was inferior to the other syrups, and it did not possess their aromatic taste, but in acrimony it is equal to any of them. A small amount of mould formed on *C*.

VIII. Syrup prepared March, 1867, like VII, possessing the

same characters. It crystallizes, owing to the presence of a little alcohol.

IX. Syrup prepared July, 1867, like VII, differing only in the application of boiling alcohol to exhaust the aqueous extract and immediate filtration from undissolved portions. In appearance and properties same as VII.

X. Syrup prepared June, 1867, like VII, differing in the use of diluted alcohol for the exhaustion of the root, and of boiling alcohol for the exhaustion of the extract. This preparation was not clear, and in fact resembled in appearance and properties I, but was not quite so aromatic.

XI. Syrup prepared July, 1867, like X, with which it corresponds in every respect.

Syrups I, IV and V were prepared from the same lot of root; III, VI and VII from a second, IX and XI from a third, and the others from individual lots.

Portions of each lot accompany this paper.

It will be observed that syrups VII, VIII and XI were the only ones that furnished perfectly bright preparations and did not deposit or thicken. As the process pursued in their preparation is essentially the same, but differs considerably from the others, it is necessary to give it a more critical examination.

Of the principles enumerated as constituents of seneka root, we find that polygalic acid, tannic acid, pectic acid, gum and albumen are soluble in water when isolated, while virginic acid, the coloring matter, cerin and fixed oil are insoluble. As they exist in the drug, however, both the coloring matter and virginic acid are to a certain extent, if not entirely, soluble in water, as evidenced by the odor and color of the infusion. In concentrating the infusion to the consistence of syrupy extract, the greater portion of the virginic acid is lost, but the coloring matter is retained. The treatment of the syrupy extract by cold alcohol, has for its object the separation of gum, albumen, and pectic acid, and undoubtedly accomplishes this object; polygalic acid, traces of virginic acid, the coloring matter and tannic acid remains in solution with the alcohol, and by subsequent treatment enter the composition of the syrup. Polygalic

acid being but sparingly soluble in cold alcohol, when isolated, although freely soluble in boiling alcohol; I instituted experiment IX, which satisfied me that none of the active matter remained undissolved. Moreover, the residues in experiments VII, VIII and IX were, when washed with cold alcohol, tasteless, while the alcoholic tincture was strongly acrimonious—satisfactory proof that polygalic acid, as it exists in the drug, is soluble in cold alcohol. Experiments X and XI were instituted in order to determine whether a more aromatic preparation could be obtained, which would at the same time exhibit the desired properties, viz: transparency and permanence. The results were in the negative, the preparations being, if anything, inferior to the officinal syrup.

Having thus given attention to all points of objections, and refuted them experimentally as far as they lay within the scope of my knowledge, I express myself favorable to the syrup prepared according to experiment VII, and beg leave to recommend the following formula, which I hope will be examined critically and experimentally.

Take of seneka, in moderately fine powder, four troyounces; sugar, (refined) fourteen and a half troyounces; distilled water two pints, or a sufficiency; alcohol eight fluidounces. Moisten the seneka with two fluidounces of water, and allow to rest for two or three hours; then pack tightly in a conical percolator, pour on water until the infusion begins to pass, when stop the operation for 24 hours, after which resume displacement, and continue until two pints have passed, or until the root is exhausted. Evaporate the percolate carefully on a water-bath to two fluidounces and, while still warm, gradually stir in the alcohol. Transfer the mixture to a bottle and shake occasionally for several hours, filter, distil to two fluidounces, add two fluidounces of water and evaporate again to two fluidounces. Then add sufficient water to make the measure up to 8 fluidounces, filter, and if not perfectly clear, refilter until the liquid passes perfectly clear. Pour the filtrate on the sugar contained in a porcelain dish and make syrup.

These directions, carefully followed, will insure a handsome product; it is scarcely necessary to state that the heating should

be moderate; the filtrate, as stated must be perfectly clear, as otherwise the preparation becomes more or less turbid. Although only a secondary consideration, it will be observed that by this process alcohol is economized, the amount used being not half the quantity required by the officinal process, and entirely recoverable by distillation, which is not the case when a portion is absorbed by the drug.

If this process should meet the approval of the Association, I would suggest that a fluid extract of seneka and a compound fluid extract of squills and seneka could be prepared according to this process, which would afford a ready means of preparing syrup of seneka and compound syrup of squills.

Louisville, Ky., July 25th, 1867.

—*Proc. Amer. Pharm. Assoc.*, 1867.

TALL TREES IN AUSTRALIA.

It would appear that the famous "mammoth trees" of California are not only rivalled, but surpassed in height, in Victoria Colony, Australia. The principal facts which warrant this conclusion, are collected by Dr. Ferdinand Müller, Director of the State Garden at Melbourne, in his interesting pamphlet, recently issued, upon "Australian Vegetation, considered especially in its bearings upon the occupation of the Territory, and with a view of unfolding its resources,"—from which the subjoined extracts are derived:—

"The marvellous height of some of the Australian, and especially Victorian trees, has become the subject of closer investigation, since of late, particularly through the miners' tracks, easier access has been afforded to the back-gullies of our mountain-system. Some astounding *data*, supported by *actual* measurements, are now on record. The highest tree previously known was a *Karri-Eucalyptus* (*Eucalyptus colossea*), measured by Mr. Pemberton Walcott, in one of the delightful glens of the Warren river of Western Australia, where it rises to approximately 400 feet high. Into the hollow trunk of this Karri, three riders, with additional pack-horse, could enter and turn in it without dismounting. On the desire of the writer of these pages, Mr.

D. Boyle measured a fallen tree of *Eucalyptus amygdalina*, in the deep recesses of Dandenong, and obtained for it the length of 420 feet, with proportions of width, indicated in a design of a monumental structure placed in the exhibition; while Mr. G. Klein took the measurement of a eucalyptus on the Black Spur, ten miles distant from Healsville, 480 feet high! Mr. E. B. Hayne obtained, at Dandenong, as measurements of height of a tree of *Eucalyptus amygdalina:* Length of stem from the base to the first branch, 295 feet; diameter of the stem at the first branch, 4 feet; length of stem from first branch to where its top portion was broken off, 90 feet; diameter of the stem where broken off, 3 feet; total length of stem up to place of fracture, 365 feet; girth of stem three feet from the surface, 41 feet. A still thicker tree measured, three feet from the base, 53 feet in circumference. Mr. George W. Robinson ascertained, in the back-ranges of Berwick, the circumference of a tree of *Eucalyptus amygdalina* to be 81 feet at a distance of four feet from the ground, and supposes this eucalypt, towards the sources of the Yarra and Latrobe rivers, to attain a height of half a thousand feet. The same gentleman found *Fagus Cunninghami* to gain a height of 200 feet, and a circumference of 23 feet.

"It is not at all likely that, in these isolated inquiries, chance has led to the really highest trees, which the most secluded and the least accessible spots may still conceal. It seems, however, almost beyond dispute, that the trees of Australia rival in length, though evidently not in thickness, even the renowned forest-giants of California, *Sequoia Wellingtonia*, the highest of which, as far as the writer is aware, rise, in their favorite haunts at the Sierra Nevada, to about 450 feet. Still, one of the mammoth trees measured, it is said, at an estimated height of 300 feet, 18 feet in diameter! Thus to Victorian trees, for elevation, the palm must, apparently, be conceded. A standard of comparison we possess in the spire of the Münster of Strasburg, the highest of any cathedral of the globe, which sends its lofty pinnacle to the height of 466 feet, or in the great pyramid of Cheops, 480 feet high, which, if raised in our ranges, would be overshadowed, probably, by Eucalyptus trees.

"The enormous height attained by not isolated, but vast masses

of our timber trees, in the rich diluvial deposits of sheltered depressions within Victorian ranges, finds its principal explanation, perhaps, in the circumstance, that the richness of the soil is combined with a humid geniality of the climate, never sinking to the colder temperature of Tasmania, nor rising to a warmth less favorable to the strong development of these trees in New South Wales, nor ever reduced to that comparative dryness of air which, even to some extent in the mountain-ravines of South Australia, is experienced. The absence of living gigantic forms of animal life amidst these, the hugest forms of the vegetable world, is all the more striking.

"Statistics of actual measurement of trees, compiled in various parts of the globe, would be replete with deep interest, not merely to science, but disclose, also, in copious instances, magnitudes of resources but little understood up to the present day. Not merely, however, in their stupendous altitude, but also in their celerity of growth, we have, in all probability, to accede to Australian trees the prize. Extensive comparisons, instituted in the Botanic Gardens of this metropolis, prove several species of Eucalyptus, more particularly *Eucalyptus globulus* and *Eucalyptus obliqua*, as well as certain Acacias—for instance, *Acacia decurrens*, or *Acacia mollissima*—far excelling, in their ratio of development, any extra-Australian trees, even on dry and exposed spots, such into which spontaneously our blue gum-trees would not penetrate. This marvellous quickness of growth, combined with a perfect fitness to resist drought, has rendered many of our trees famed abroad, especially so in countries where the supply of fuel or of hard-woods is not readily attainable, or where for raising shelter, like around the cinchona-plantations of India, the early and copious command of tall vegetation is of imperative importance. To us here this ought to be a subject of manifold significance. I scarcely need refer to the fact, that, for numerous unemployed persons, the gathering of Eucalyptus seeds, of which a pound weight suffices to raise many thousand trees, might be a source of lucrative and extensive employment; but on this I wish to dwell, that in Australian vegetation we probably possess the means of obliterating the rainless zones of the globe, to spread at last woods over our deserts, and thereby

to mitigate the distressing drought, and to annihilate, perhaps, even that occasionally excessive dry heat evolved by the sun's rays from the naked ground throughout extensive regions of the interior, and wafted with the current of air to the east and south, miseries from which the prevalence of sea-breezes renders the more littoral tracts of West and North Australia, almost free. But in the economy of nature the trees, beyond affording shade and shelter, and retaining humidity to the soil, serve other great purposes. Trees, ever active in sending their roots to the depth, draw unceasingly from below the surface-strata, those mineral elements of vegetable nutrition on which the life of plants absolutely depends, and which, with every dropping leaf, is left as a storage of aliment for the subsequent vegetation. How much lasting good could not be effected, then, by mere scattering of seeds of our drought-resisting acacias and eucalypts and casuarinas, at the termination of the hot season, along any water-course, or even along the crevices of rocks, or over bare sands or hard clays, after refreshing showers? Even the rugged escarpments of the desolate ranges of Tunis, Algiers, and Morocco, might become wooded: even the Sahara itself, if it could not be conquered and rendered habitable, might have the extent of its oases vastly augmented; fertility might be secured again to the Holy Land, and rain to the Asiatic plateau, or the desert of Atacama, or timber and fuel be furnished to Natal and La Plata. An experiment, instituted on a bare ridge near our metropolis, demonstrates what may be done."

A systematic catalogue of the known trees of Australia, with indications of their territorial distribution, occupies 18 pages of this essay; from which it appears, that in Australia, no less than 950 woody plants attain a height of at least 30 feet, or thereabouts. A. G.—*Silliman's Journal*, November, 1867.

ON SUPPOSITORIES AND MEDICATED PESSARIES.

By Barnard S. Proctor.

Now that the dispensing of suppositories is becoming a matter of frequent occurrence, it is highly desirable to give publicity to anything which will facilitate the operation, and diminish the

uncertainty which has hitherto attended it. I therefore beg to offer to my pharmaceutical brethren a few remarks upon the methods of manipulation which, after sundry trials, I have found most convenient.

The difficulties to be overcome may be thus enumerated:

The composition must be firm, but readily fusible, not liable to split, and not apt to adhere to the mould.

The active ingredients must be so diffused that there shall be an equal quantity in each suppository, whether six or sixty have to be dispensed at one operation, and that each suppository shall be uniform throughout its substance.

The size and shape must be uniform throughout any series, but capable of variation at the will of the prescriber.

And these requirements must be met with as little expenditure of time as possible, both on commercial grounds and for the convenience of the patient.

The first requirements, those depending upon composition, are already removed from the province of the pharmaceutist, the Pharmacopœia having supplied us with a formula which leaves no difficulty with regard to the properties of the basis except its disposition to adhere to the mould. This adhesiveness is one great source of annoyance, and various methods have been suggested for overcoming it.

The suppositories, when cast in the usual metal moulds, frequently adhere so closely as to be torn in two when the mould is opened, and this is more especially the case if ample time cannot be allowed for them to become thoroughly cold and hard.

If moist clay be adopted as a matrix, there is little fear of the suppositories being broken in the extraction, unless they are moved before quite hard. They may be dug out with a stiff knife, but are not in condition for use without washing; and all this is wasteful of the most costly element in their production—time.

After various expedients had been tried, such as rubbing the metal mould with oil or glycerin, in the hope of preventing adhesion, I adopted, with the greatest satisfaction, little cones of tinfoil, setting them in the gun-metal mould; all chance of adhesion is thus prevented, and the foil is readily removed when

the suppositories are cold, without any fear of splitting them. Having so far succeeded, I was tempted to return to the clay matrix, with the view of preparing a larger number at a time than my metal mould was constructed for. The foil cones are easily constructed so close as not to allow the escape of the melted material, even if they are not imbedded in an impermeable material; the tinfoil itself may therefore be now considered the mould, and the next problem is to find a convenient mode of supporting it during the process. The soft wet clay which I had been using was found inconvenient, from the foil adhering to the clay so closely that the suppository could not be removed before it was thoroughly hard, and then required to be dug out as before described. Trial was next made with several powdered materials, such as sand, French chalk, or powdered clay. It is difficult, however, to avoid the contamination of the suppositories with these powders, which are all objectionable, more especially the sand, besides which, they do not afford a support to the mould sufficiently firm to prevent it being bulged out of shape, and they were all in turn discarded; clay, in its solid form, either tough or hard, being much more suitable. There is nothing more simple than to take a box of clay and make conical holes in it, suitable for supporting the tinfoil moulds. I at first used moist clay, and kept it plastic by mixing with glycerin, and if the shape of the suppositories is to be changed from time to time, the plastic clay is most convenient, but if one form is adopted for general use, there is no objection to the clay matrix becoming hard, for if it cracks, that is of no importance, seeing that it is only used as a support for the tinfoil.

If the conical depressions are made in moist clay, they are most readily formed by using a model of a suppository as a dibble. One hole made too near another will bulge in the sides of its neighbor, and in that case it is necessary to put the dibble into each a second time after they have all been roughly formed.

The model of the suppository which is to be used as a dibble, and upon which the tinfoil moulds are to be formed, will now require a few words. If the usual conical shape is desired, it may easily be extemporized by softening the end of a rod of gutta-percha, or of a stick of sealing-wax, and pressing it into a conical

minim measure; and other shapes may be readily formed from a piece of wood, no matter what kind, roughly cut into shape of a size larger than that ultimately required, putting it into the fire for a second or two, and dressing it into the exact pattern by the use of a file.

Supposing suppositories of the usual size and form are required, and that the model is ready, the tinfoil may be cut into convenient disks by pressing it upon a two-ounce pill-box, and cutting out with scissors; the foil being first folded, a dozen or more of disks may be cut at once; place the point of the cone in the centre of one of the disks, and fold the foil closely about it, avoiding wrinkles as much as possible; the foil mould is then ready for use, and may be dropped off the tip of the dibble into the clay stand. The moulds having been arranged in this way, and the requisite ingredients melted in a wide-mouthed bottle set in hot water, the moulds will be most conveniently filled by means of a common glass syringe, the piston being removed and an india-rubber ball substituted; the bottle being taken in one hand and the syringe in the other, the fluid ingredients are to be stirred with the syringe till they begin to thicken, and then transferred to the moulds by means of the syringe, the active constituents being kept thoroughly mixed through the mass during the operation, by stirring with the syringe between the lifting of each portion of the material from the bottle.

While the suppository is still soft, though not fluid, it may, if necessary, be removed from the clay by carefully lifting foil and all together, and if it is important to save time they may be immersed in cold water till quite firm, when the foil may be rolled off, and they are fit for delivery to the patient. Of course, if there is no need for hurry, they are just as well left in their stand till quite hard.

Any one who has experienced the same difficulty with the metal mould which I have done, will probably, with advantage, follow my example in adopting tinfoil, the original mould being simply used instead of a clay stand to support the foil.

The same proceeding exactly is adapted to the production of pessaries or suppositories of other sizes and shapes, probably also of medicated bougies, though with these I have as yet had no experience.

In all cases it is most convenient to operate with forms which are more or less conical, and with the apex rounded; a thimble illustrates the shape best suited for pessaries, and as it also affords a sufficient latitude of sizes, and is always easily procured, we cannot do better than extemporize a pessary-dibble with sealing-wax or gutta-percha and a thimble, in the same manner as was done for suppositories with a minim measure.

It will be observed that the materials are all such as are to be found in any shop or surgery, for a lump of carbonate of magnesia or of chalk may be used instead of clay. And all the operations are such that any one could undertake to perform with success at a first attempt. There is no highly-finished apparatus to be made, nor any delicacy of manipulation to be acquired, and on these grounds I offer these remarks to the notice of my brother pharmaceutists, who may now and then be annoyed at the intractability of the old method, while some impatient customer urges him to lose no time.

Grey Street, Newcastle, Oct. 16, 1867.

—*London Pharm. Jour.*, Nov., 1867.

ON GLYCELÆUM: A PROPOSED BASIS FOR OINTMENTS.

By T. B. Groves, F.C.S.

Some years ago, when stirring together on my plate a mixture of mustard, sugar, vinegar and olive oil, I observed a tendency towards combination, and on persevering with the process I eventually obtained a semi-transparent paste of soft consistence, which, when mixed with a further proportion of vinegar, gave an elegant emulsion. I subsequently found that by modifying my method I could obtain this result very readily. Since then I have, as occasion required, prepared a very useful salad paste, which, being composed of the simple materials common to all salad dressings, formed a kind of universal basis, and being destitute of vinegar, kept well for a length of time.

It was made thus:—

Take of Mustard,	. .	℥iij
Syrup,	. .	℥j.
Olive Oil,	. .	℥iij.

Mix the mustard and syrup in a mortar to a smooth paste, then add gradually, with constant trituration, the olive oil. When nicely made, it forms a soft paste which, after a few days' rest for the elimination of air bubbles, becomes nearly transparent. When mixed by gradual addition with vinegar and flavoring ingredients to taste, it forms, to my mind, an excellent and simple salad dressing. This is not strictly pharmaceutical, but it was out of this arose the idea of the subject of this paper—Glycelæum.

It of course soon occurred to me that other oils besides olive could be so emulsed, and that compounds so obtained might be made to serve the purposes of the surgeon or of the doctor—might be used to favor the assimilation of oil, or as dressings for wounds and such like. Mustard was, of course, inadmissable for either purpose. I must here observe that, if the ingredients for the salad mixture above referred to be made much thinner than in the recipe given, it will be impossible to mix them in a mortar by trituration, the same also if a much larger proportion of oil be used; but combination may readily be effected by stirring, or rather "slicing," with a flexible spatula. The pressure of the pestle seems to squeeze out the air from the emulsion as soon as formed. This is on a par with what I and doubtless others have remarked—viz., that the common liniment containing vinegar, camphor and turpentine emulsed with yolk of egg, is more readily mixed by simple agitation in a bottle than by working it in a mortar. The yolk must, of course, be thoroughly broken up, in order to destroy its structure and render it miscible with water.

To return from my digression. On making trial of the usual gummy substances, such as acacia and tragacanth, I found that this class of compound could not be formed by their aid; emulsions of the ordinary kind might be made, but not *paste* emulsions. The natural thing to do in such case was to separate in a pure form the emulsive principle contained in the mustard seed, and go to work with it; but before doing so I tried the finely powdered farina of other oil seeds, such as linseed and almond, and was gratified to find that either will answer the purpose as well as mustard. I have no doubt that all the oil seeds, when

deprived of their oil by pressure and then reduced to powder, answer equally well, though perhaps not all with equal power. The meal of decorticated pressed sweet almonds is that which I prefer, and which I have used. Messrs. Barron, Harvey & Co., who express a good deal of almond oil, were kind enough to prepare for me a cake of this article. When powdered, it should be passed through a fine silk sieve—cypress or lawn; it refuses altogether to go through a fine wire sieve.

To prepare Glycelæum then:—

Take of Almond Meal, . .	½ oz.
Glycerin, . . .	1 oz.
Olive Oil, . . .	3 oz.

Mix s. a. It may be effected in a mortar in the ordinary way up to nearly the end of the operation, but it is better, I think, to use the spatula and "slice" in the last addition of oil. It will then form a soft, semi-gelatinous paste, which, when mixed gradually with water or a watery fluid, forms readily an emulsion. The glycerin it contains being protected by the oil, it does not quickly deliquesce, though when exposed to the air for some time it does soften somewhat. It is, of course, unaffected by the ordinary temperatures of the body; if it were otherwise, its softness would be an objection to its use; as it is it leaves plenty of room for powdery admixtures of every kind.

This form may be varied in many ways—viz., the glycerin may be either pure or diluted, and may or may not in either case contain medicinal substances in solution. The olive oil may be substituted by another oil, or by a mixture of oils, or again by a balsam, an essential oil, or a hydro-carbon. All these may or may not contain other substances in solution. It is only essential to remember that the body, in the first place, must not precipitate emulsine; in the second place, must be a fluid. I have in several ways attempted to emulse lard. I have melted it and succeeded perfectly so long as it remained fluid, but if stirred after solidification the emulsion was at once "inverted," or, as Mr. Proctor styles it, converted into a "negative" emulsion, *i. e.*, the glycerin is emulsed in the fat, and not the fat in the glycerin.

The advantages I attribute to Glycelæum, as compared with

ointments and with plasma, I imagine to be these. Ointments are greasy, prone to rancidity, do not "touch," in a strict sense, watery surfaces, and are not easily removed from the surfaces to which they become attached. On the other hand, they are cheap, they are fatty, and they are repellent of moisture.

The chief objection to plasma, of which I know little and therefore shall say little, is that it is dear. I have heard that in use it is troublesome, in consequence of its proneness to deliquescence. My other objection may seem fanciful, but it is a fact that I cannot look with favor on a dressing for wounds that does not contain some fatty substance. Fats have been used for that purpose from the very earliest ages. The use of oil is mentioned and recommended in the Bible, and fat in some form or other is still universally employed by men, civilized or savage, in the dressing of external wounds. Its great and overwhelming advantage is its cleanness in use. It is readily removed by sponging. It "touches" completely the parts to which it is applied. Glycelæum is cheap, it is easily sponged off, it "touches" wet surfaces and combines with them to form an emulsion, resembling somewhat in character the pus which nature pours out for the defence of raw surfaces. It does not deliquesce to a disagreeable extent, nor does it soften by the heat of the diseased parts. It is capable, as I have indicated, of an immense amount of variation. I have never observed it to become mouldy or rancid from keeping.

Glycelæum has been little tried as a remedy. I have had difficulty in finding persons to make trial of it. Dr. Tilbury Fox has, however, at Mr. D. Hanbury's suggestion, made some experiments with it, and reports "that he likes it very much. That it is a capital thing where it is a desideratum to get hardened parts into a more 'supple' condition." Although I can bring but one testimony in its favor, it must be allowed to be a first-rate one.

Still less trial has been made of Glycelæum as a vehicle for the administration of oils and balsams, though it would not be difficult to find stomachs that support with difficulty castor and cod-liver oils, and balsam of copaiba. As "oiled" melted butter is known to upset a weak stomach, whilst well-made—*i. e.*,

well emulsed melted butter—does not, it might be inferred that an emulsed oil would in some cases agree with the stomach when the plain oil would not. I am convinced of this, that the Glyce-læum copaibæ, stiffened with powdered cubeb, would form a more elegant and a more supportable electuary than the nasty and imperfectly mixed mass one commonly meets with.

The uses of these bodies in the cosmetic art will not, I presume, be lost sight of.

I have already alluded to the fact that it is to the emulsine contained in these oil-seeds we must attribute the extraordinary emulsive power of these vegetable powders. (Certainly no organic principle has been more consistently named than it.) This I have proved experimentally by preparing some of the substance and trying it in its pure state. I found that 5 grains dissolved in one drachm of water would emulse into a jelly four drachms of olive oil (using the spatula, not the pestle). I prepared the emulsine by digesting for a few hours powdered almond meal with tepid water, filtered and added to 3 measures of the filtrate, 5 measures of rectified spirit, collected the precipitate, and dried it at a temperature not exceeding 100°.

Having a few more minutes to spare, I will say a few words about the dietetic use of emulsine. I wonder it has not been pressed into the service of the infants. It is really a vegetable albumen, like it it is coagulable by heat, and contains a large proportion of nitrogen in a form available for the production of fibrin for the blood and muscles. It is contained, it is said, in almonds to the extent of 30 per cent., and is easily extracted therefrom. A tepid infusion of the meal, filtered, sweetened, and then evaporated at a temperature not exceeding 100° to a syrup, would not be unlikely to be a useful alimentary preparation.—*Chem. and Drug.*, Sept. 14, from *Trans. Brit. Conf.* 1867.

CAUSE OF DEATH FROM SNAKE-BITES.

To the Editors of the Pharmaceutical Journal.

Gentlemen,—Professor G. B. Halford, M. D., of the Melbourne University, has been investigating the cause of death from snake-bites, especially that of the cobra de capello, and

although his investigations might be considered more within the province of the physiologist than of the pharmaceutist, I think a few extracts from them might be highly interesting to the latter.

The Professor directs his attention to the state of the blood after death, and in all cases finds it dark, very fluid, and without any tendancy to coagulate on exposure. He finds it to contain a large number of foreign cells, which, when highly magnified under the microscope, are seen to contain nuceli. His own words will probably best describe them.

"When a person is mortally bitten by the cobra de capello, molecules of living 'germinal' matter are thrown into the blood and speedily grow into cells, and as rapidly multiply, so that in a few hours millions upon millions are produced at the expense, as far as I can at present see, of the oxygen absorbed into the blood during inspiration; hence the gradual decrease and ultimate extinction of combustion and chemical change in every other part of the body, followed by coldness, sleepiness, insensibility, slow breathing, and death.

"The cells which thus render, in so short a time, the blood unfit to support life, are circular, with a diameter on the average of one seventeen-hundredth of an inch. They contain a nearly round nucleus of one two-thousand-eight-hundredth of an inch in breadth, which, when further magnified, is seen to contain other more minute spherules of living 'germinal' matter. In addition to this, the application of magenta reveals a minute colored spot at some part of the circumference of the cell. This besides its size, distinguishes it from the white pus, or lymph corpuscle.

"Thus, then, it would seem that as the vegetable cell requires for its growth inorganic food and the liberation of oxygen, so the animal cell requires for its growth organic food and the absorption of oxygen. Its food is present in the blood, and it meets it in the lungs; thus the whole blood becomes disorganized, and nothing is found after death but dark fluid blood,—its fluidity indicating the loss of fibrine, the dark color its want of oxygen, which it readily absorbs after death."

The Professor considers this a probable clue to the further

study of zymotic diseases and of cholera especially, the effects bearing strong comparison.

Faithfully yours,
CHARLES SYMES.

Birkenhead, August 20th, 1867.

—*Lond. Pharm. Jour., Sept.*, 1867.

ANALYSIS OF ORDINARY COMMERCIAL SPECIMENS OF JALAP, SHOWING THEIR RELATIVE VALUE IN PROPORTION OF RESIN OF JALAP, COMPARED WITH MARKET PRICE.

By MR. ALFRED SOUTHALL (BIRMINGHAM).

	Description.		Resin, per cent.	Market Price. s.	d.	
No. 1	Jalap,	Tops	5	0	4	per lb.
" 2	"	"	12	0	5	"
" 3	"	Tampico	9½	0	10	"
" 4	"	"	10½	1	0	"
" 5	"	"	30½	1	0	"
" 6	"	"	29	1	6	"
" 7	"	"	12½	1	6	"
" 8	"	"	33¾	2	0	"
" 9	"	"	27	2	0	"
" 10	"	Vera Cruz	15½	4	0	"
" 11	"	"	17½	4	0	"
" 12	"	"	17¼	4	0	"
" 13	"	"	12½	4	0	"
" 14	"	"	23	4	4	"
" 15	"	"	20¼	4	6	"
" 16	"	"	16¾	4	10	"

The importance of maintaining a uniform medicinal value in the drugs ordered by the Pharmacopœia cannot be over estimated. The British Pharmacopœia has, in the instances of opium, cinchona bark, and scammony, given a standard value for each of these remedies; but I think it might with great advantage have included some other drugs, and among the rest the subject of this analysis. That market prices are frequently no guide to the pharmaceutist, the analyses which were offered at the last meeting of this Conference of various samples of opium

and scammony, sufficiently testified, and the additional proof offered by the specimens of jalap herewith amply confirm the statement.

In order to ascertain the medicinal value of the supplies of jalap as found in the shops of pharmaceutists I procured five specimens of powdered jalap at different establishments, and found the result in per-centage of resin as follows:—

No. 1. 13 per cent. of resin.
" 2. 15 " "
" 3. 9½ " "
" 4. 16½ " "
" 5. 17 " "

The commercial value of jalap imported from Tampico is much inferior to the kind imported by way of Vera Cruz; but an average of seven samples of each kind here analyzed show that the Tampico is richer in resin than the Vera Cruz, the average in the one case being about 22 per cent., and in the other 17½ per cent.

I have made an experiment with the purgative effects of the two varieties, and find them much the same. The resin from Tampico jalap is somewhat darker than that from the Vera Cruz variety, and has a distinctive peculiarity of smell, but I have not discovered any difference in chemical character.—*Chemist and Druggist*, Sept. 14, 1867, from *Trans. Brit. Conf.* 1867.

VERATRUM VIRIDE.

By Charles Bullock.

In response to the 15th query, referred to me at the last meeting of the Association, I would respectfully report that the whole subject has been submitted to a second investigation, the results of which tend to confirm my former experience of the existence of two alkaloids in Veratrum viride.

I have nothing farther to add to my remarks published in the American Journal of Pharmacy [vol. xxxvii., page 325], concerning the characters of these two alkaloids, except to mention the peculiar odor of the alkaloids when recently precipitated and still moist—an odor recalling faintly that of the alkaline hypo-

chlorites. This character is more marked in the product soluble in ether.

I would also call attention to the distinctiveness of Trapp's test for veratria—the rich color, resembling a solution of permanganate of potassa, afforded by heating veratria in hydrochloric acid is not evanescent. In a test tube, protected from dust and air, the color remains unchanged for two months.

The resin of Veratrum viride, when precipitated from a concentrated alcoholic extract of the root by pouring it into water, retains the alkaloids with great persistence. The following manipulations were adopted for its purification: After treatment with ether until exhausted by that menstruum, the resin was dissolved in alcohol and re-precipitated by pouring into acidulated water. This operation was repeated several times; the resin was then dried, powdered, and washed on a filter with acidulated water until the washings were no longer disturbed by neutralization with an alkaline carbonate.

The resin as thus purified had the following characteristics:

On platinum foil—fused, intumesced, and carbonized.

With test paper—the alcoholic solution was neutral.

With hydrochloric acid—does not dissolve and produces no change of color; on heating it imparts a brown color to the acid.

With sulphuric acid—partially dissolves, giving the usual dark brown color of carbonized matter to the acid.

Physiological Effects. One-third of a grain of the resin, dissolved in alcohol, was taken every half hour until one grain was administered. No effect on the circulation or other result was noticeable.

On a second trial the same dose was administered at the same intervals until two grains were taken. No effect on the pulse in force or frequency was observed; the only result—an unexpected one—was great prostration of digestive functions, subjecting the experimenter to a temporary but severe attack of dyspepsia. Not being familiarized to this *popular* complaint the experiment was not pushed farther.

In conclusion, the opinion derived from the investigation leads to the belief that the resin of Veratrum viride, when purified from adhering alkaloids, does not possess the sedative action on

the circulatory system so strongly marked in the plant, and which, it has been shown, is possessed in a marked degree by the alkaloid from the plant insoluble in ether.

The chemical relation, which the alkaloids bear to veratria, I have not been able to investigate.

Philadelphia, September, 1867.

—*Proc. Am. Pharm. Association*, 1867.

ON COMMERCIAL JALAP.

By Edward R. Squibb, M. D.

A few notes made during the past six years upon the character of this drug as casually met with in the largest market of this country, present some points well worthy of serious consideration.

Ordinary merchantable jalap, from low grade through fair and good up to prime quality, yields from 11 to 16·25 per cent. of resin, and the proportion of resin is the true and only standard of quality and value. From this it is seen that the drug is so variable in quality as to have a range of at least 5·25 per cent. on 16, or that some lots are one-third more valuable than others. This taken in connection with the circumstance that the stock in trade is always below the average, and the better qualities very rare, serves to explain the fact that in its more legitimate channels of use this drug, within a few years past, has rapidly lost reputation. During the period of this rapid decline in quality the price has more rapidly advanced, and this condition is so great a temptation to adulteration and falsification that the markets rarely withstand it. In the case of jalap the substitution of other roots, the admixture with rootlets and immature tubers, and the sending to market imperfectly dried, have all been partially successful, but the drug is so definite in its physical character that such falsifications could not be practiced to a great extent without great damage to the market prices so long as the article remained in first hands, and could not be got into the drug mills. Some other mode of falsification, therefore, seemed to be required, and this has probably been found in a more or less partial exhaustion of the root, without breaking it up, before it is sent from the place of production.

In the early part of 1861 a lot of 18 bales, of about 200 lbs. each, arrived in this market, and was powdered and dispensed over the country, containing only 1·8 per cent. of resin. The tubers were fine and large, of good bright color, good odor, a little light in weight, and of a very tough consistence and starchy looking. They were very thoroughly cut in the direction of the long diameter, but the parts not separated, and still the drying appeared imperfect. No fair judge of jalap would have bought this lot at any ordinary price, and it was probably sold at a low price, and bought on speculation by one or more houses whose market was for powdered jalap, and near to the consumers who would not be likely to be over critical. This lot was traced to a large drug mill, and there lost sight of because it made a very handsome powder not distinguishable from better grades.

Later in the same year a lot of 7 bales, of about 200 lbs. each, inferior in appearance to the last lot, came consigned to a large drug house, and was sold for powdering. Much of this looked unlike jalap, but was probably the rootlets, and this portion did not appear to have been subjected to fraudulent treatment. This lot yielded 2·22 per cent. of resin, all of which appeared to be true jalap resin, though of lighter color than is usual.

In the early part of 1863 another lot, of unknown size, but probably not very large, was encountered, looking bright and well—indeed much too clean and bright—tough in consistence, devoid of resinous appearance, and light in weight. This contained 3·3 per cent. of resin. What became of it is not known.

Within the past three months a lot of 95 bales, 25 of which are said to have been re-shipped to France, was offered by broker's sample in this market. Although recognized at first sight as true jalap, unmixed, and perhaps not far out of the common range of the common market, there was yet something amiss about it to the practised eye which first saw it in the broker's hands. It was tough and light, too starchy looking, and had too strong a jalap odor. To the writer's less experienced judgment it at first did not seem to be much out of the way in appearance, but upon assay it proved to contain about 8 per cent. of resin. The tubers of the sample were sawed in two, and one-half used for assay. The other half is presented for inspection with this

paper. These four instances coming naturally and unsought for, within the observation of one who sees so little of this drug as the writer does, leads to the inference that these were not the only cases of this kind which occurred within the past six years; and the testimony of so good an authority as Mr. Daniel Hanbury, of London, has recently been given to the variable and precarious character of this drug, as found in the market with which he is so familiar.

In reasoning upon the condition of jalap here mentioned, with the specimens under close observation, the writer has arrived theoretically at the conclusion that all such jalap is partially exhausted in Mexico before being exported, and that increasing skill in this practice and close calculation of the neat results in the markets is leading those who practice this fraud to a more and more limited exhaustion, in order better to escape detection. The facility of exporting alcohol cheaply from this country adds to the probability of the view here taken.

An assay of jalap is one of the simplest and easiest processes in applied Pharmacy, and no pharmacist should buy or dispense powdered jalap without previously testing it. About an ounce of the powder, carefully weighed to within a grain, is thoroughly wetted with say 1½f℥ of stronger alcohol, and the mixture transferred to a small funnel arranged for percolation. Stronger alcohol is then poured on top until the percolate ceases to give a cloudiness, when a drop is allowed to fall into a vessel of water. The percolate is then evaporated to a syrupy consistence, and a little water carefully added to it while hot. It is then poured into 4f℥ of cold water, with active stirring, and the precipitated soft resin collected in a capsule and dried with constant stirring until a thread of it drawn out by the stirrer is perfectly brittle. The capsule having been previously tared, it is now very easy to obtain the weight of the dry resin, and calculate its percentage proportion to the powder. As the ordinary merchantable root yields from 11 to 16 per cent., and as this loses from 10 to 14 per cent. in powdering, any sample of powder that does not yield over 12 per cent. of dry resin should be at once rejected as unfit for medicinal use.

Brooklyn, N. Y., Aug. 21*st*, 1867.

—*Proc. Am. Pharm. Association*, 1867.

THE SULPHUR PRODUCE OF ITALY.

The sulphur mines of Italy have long been famous for their yield, and their present productiveness fully sustains their reputation. They are now producing something like 300,000 tons per annum, which, taken in the crude state, represents a money value of about £1,200,000. But their yield has only become so enormous in the course of years, the average yield for the year 1830 being but one-tenth of the present yield. The greater part of the above quantity is derived from Sicily; the Romagna, however, commenced to increase the supply some seven years since, and in 1862 was contributing about 8000 tons per annum, and this quantity has since been increased. For the last fourteen years an improved method of separating the sulphur from the accompanying limestone has been successfully practiced in Sicily. The separation of the sulphur from gangue is always effected by liquation, the necessary heat for the fusion being obtained by burning a portion of the ore. This operation, which was formerly effected in small cylindrical open kilns, is, by the improved process, performed in heaps, which are often four hundred times the capacity of the kilns. The ore is arranged in a manner similar to that adopted in charcoal burning, the air being excluded by an impermeable covering of earth. The loss occasioned by the formation of sulphurous acid has been greatly reduced by the new process. The production is increased by one-fifth, and the new heaps can be placed in the vicinity of houses and gardens without objection. Under the old system it was necessary to keep the heaps several miles away from dwellings and vegetation. The further advantage of the process is that the heaps may be fired at any time, instead of large masses of ore being kept in reserve for ignition at a particular season of the year. Beyond this the process, which formerly was one of the most deadly nature, has been converted into one almost free from danger to the workmen.

A large portion of the island of Sicily is occupied by the gypsum and sulphur bearing formation, which extends from Mount Etna to the neighborhood of Trapani. The rate of productiveness diminishes towards Trapani, Caltanisetta and Girgenti boasting the best mines, Catania and Palermo those

next in importance, whilst the least yielding are in the province of Trapani. In Sicily, as well as in the Romagna, the gypsum formation includes limestones, clays which are more or less marley, and beds of gypsum. In the latter rock, as well as in the limestones, the sulphur is found as an uniform or irregular mixture, sometimes concentrated in small parallel seams, and occasionally crystallized. In the latter case it is often associated with sulphate of strontia or celestine. The sulphur occurs in a different manner in the clays and slates, being found concentrated in globular masses. This method of occurrence is also common to all the sulphur mines of the Continent which are contained in argillaceous strata. Only a portion of the sulphur obtained is refined on the island, the greater part being exported in the crude state. For commercial purposes it is classified into three general qualities, which are further divided into seven sub-classes. There are about fifty mines at present at work in Sicily, and the number of hands employed is over twenty thousand.

The Romagna Sulphur Mining Company possesses eight mines, five of which are in the province of Forli, Romagna, whilst three are at Monte Feltre, in the province of Urbino and Pessaro, in the Marches. The refined produce is exported chiefly from Rimini, where the refining works are situated, to the principle centres of consumption among the large towns of Italy. Refined sulphur is used in various manufactories for making sulphuric acid, and for several years past a new use has been found for it in the sulphuration of vines. In the course of scientific progress the general process, to which we have already alluded, has been improved in many minor details. But beyond this, an entirely new process is just reported to have been introduced by M. Brunfaut, a Belgian. The average composition of the sulphur stone of Romagna is, for every 100 parts, 30·60 of sulphur, 26·80 of lime, 41·20 of alumina and silica, and 1·40 of water. By the ordinary method of extraction, only 10 of the 30 parts of sulphur are obtained; there is, therefore, a loss of upwards of 20 per cent., which, of course, must influence not only the profits, but also the price of the article. These defects in the system appear to have been completely obviated by M. Brun-

faut, who is said to have obtained a yield of 25 per cent. instead of 10.

As already observed, the sulphur is contained only in a state of mixture in the Romagna stone, and not being in chemical combination with any substance, is easily separated by fusion. The melting point of sulphur being extremely low, fusion may be effected by hot-air or by steam, instead of in kilns or even heaps, where the excess of heat converts a large portion of the substance into sulphurous acid. Taking advantage of this property of sulphur, M. Brunfaut employs an apparatus which consists of a horizontal cylinder, containing an archimidean screw throughout its whole length. The cylinder is made to revolve more or less slowly, according to the nature of the mineral to be treated. The sulphur ore is poured in through a funnel at one end of the cylinder, and when it has sufficiently undergone the action of the apparatus it is led out at the other end. The temperature in the cylinder is maintained by hot-air or steam, which is introduced under a pressure of three atmospheres. By this machine 150 cubic metres of the mineral are reported to be disposed of in twenty-four hours. This economical method of extracting sulphur from its minerals is a matter of great importance to Italy, which is so rich in that valuable substance.—*Jour. Franklin Institute, Oct.*, 1867.—*Lon. Mech. Mag., Aug.* 1867.

SOLUTION OF CHLORINATED MAGNESIA.

By Robert F. Fairthorne.

Thinking that this preparation, from the possession of certain properties, has advantages over the solution of chlorinated soda, known by the name of "Labarraque's Disinfecting Liquid," I would suggest the following simple formula for making the same: Dissolve 8 ounces sulphate of magnesia in two pints of water. Triturate in a mortar 4 ounces and 1 drachm of chlorinated lime with an equal amount of the same fluid. Mix the solutions together and agitate occasionally.

After standing twelve hours pour off the supernatant liquid.

This consists of a solution of chlorinated magnesia containing a small amount of sulphate of lime. I found, by adding solution

of caustic soda, that the precipitate produced thereby from 4 ounces of the liquid, when dried, weighed 35 grains; therefore each ounce contains a little less than 9 grains of magnesia.

The superiority over the corresponding solutions of soda and lime as a remedial agent, consists in the base (magnesia) which it contains not being caustic in its nature. Therefore particularly adapted either for internal use or as an application to delicate tissues where the effect of chlorine or its compounds only is required.—*Jour. Franklin Institute, Oct.*, 1867.

CRYOLITE AND ITS PRODUCTS.

By Evan T. Ellis.

This remarkable mineral, which, as you will observe, is partially transparent, of a vitreous lustre, and brittle texture, is a fluoride of sodium and aluminum, containing—

13	per cent.	aluminum,
34	"	sodium,
53	"	fluorine.
100		

It is found in an immense deposit in Greenland, at Iviktout, at the head of Arksut Bay, near Cape Farewell. The first discovery was made by one of the missionaries, who carried a specimen with him to Copenhagen. Its true composition was determined by Vanquelin.

There is a bed eighty feet thick, and three hundred feet long, at the above-mentioned place.

It is frequently associated with the salts of metals, and beautiful crystals of galena, or sulphide of lead, chalybite, or brown spathic carbonate of iron, resembling spar in lustre, copper pyrites with silver, iron pyrites, &c., are found therein, arranged in masses segregated from the white, transparent, ice-like cryolite.

It remained for the "Pennsylvania Salt Company" to introduce to our country this valuable material. This energetic Company, whose works are in western Pennsylvania, has secured the privilege of using a large part of all that is mined, and has,

within two years past, imported into Philadelphia thirteen cargoes, or nine thousand tons, which have been sent to their works for manufacture.* The greater portion of this has been used for their patent Saponifier. They are now devoting their attention to the preparation of caustic soda, carbonates, and other salts of soda, sulphate of alumina, &c.

Soda is obtained from cryolite by simply mixing with lime, and subjecting to heat. The fluorine combines with the calcium, forming fluoride of calcium; while the remaining metals absorb oxygen from the air, and become alumina and soda. Carbonic acid is then passed through the solution, forming, with the sodium, a carbonate of soda, which remains suspended, while the alumina, being insoluble, is deposited at the bottom of the vessel. The carbonate of soda is deprived of its acid by means of lime in the usual manner, and thus rendered caustic, and fitted for the use of the soap-maker.

One hundred pounds of cryolite yield—

	44	lbs. dry caustic soda,
or	75	" " carb. "
or	203	" crystal carb. "
or	119½	" bicarb. "
and	24	" alumina.

The sulphate of alumina contains 2·82 of sulphuric acid to 1 equivalent of alumina, therefore this is more than a neutral salt (3· being neutral), which is very desirable for manufacturers of paper, calico printers, &c.† It is also entirely free from iron, another very important characteristic.

There is another very important use to which cryolite can be applied. By a fusion of one part of cryolite with from two to four of pure silex, a beautiful glass is formed, susceptible of mould and polish, and capable of being manufactured into an endless variety of useful and ornamental articles, and probably many utensils for chemical and pharmaceutical use will be made of it. A company has been operating in Philadelphia for some time past, on an experimental scale, entitled the "Hot Cast Porcelain Company." The results have been so satisfactory

* They will import this year (1867) eight thousand tons.

† The English often contains as high as 3·27 of acid.

that they have now taken a large establishment, and will be prepared to carry on the manufacture quite extensively. The cost is, at present, from ten to twenty per cent. higher than ordinary flint glass. The ware seems to be stronger than glass.—*Proc. Am. Pharm. Association*, 1867.

SWEET SPIRIT OF NITRE.

By A. Theod. Moith.

Not many apothecaries will be able or willing to prepare sweet spirit of nitre according to the formula laid down in the Pharmacopœia, unless they be the owners of a well appointed laboratory.

It is notorious that nearly all the sweet spirit of nitre sold by druggists for 85 cents per pound does not come up to the tests of the Pharmacopœia. Unless a physician insists peremptorily on having Dr. Squibb's nitre, it is not likely that the apothecary will procure the proper article: as a pure article like Dr. Squibb's, which I have used exclusively for the last four years, costs $1.46 per pound, the difference is too great for most.

In this dilemma between dispensing a cheap poor article and a good one, comes to our relief, in my humble opinion, a formula by Professor Theoph. Redwood, given in the July number of the Druggists' Circular.

Struck by the *rationale* of this formula, I prepared it by this formula three or four times, and the spirit of nitre resulting answers fully all the tests of the Pharmacopœia.

Any one with the slightest claim to the name of apothecary will be able to perform the task easily, cheaply, and without any risks. A retort, a glass receiver marked with a strip of paper, pasted on, to indicate 12 and 15 ounces, a Fahrenheit thermometer, besides a stove, and a stove kettle for water-bath, are all that are necessary in the way of apparatus.

Around a pencil I coiled loosely a cylinder of fine copper wire (No. 22 will do), 2 oz.; remove the pencil, and introduce or slip the wire into the retort. Pour on this, through a long-necked funnel, a mixture made as follows:

To 1 pint stronger alcohol pour slowly, under constant stirring, 2 fluidounces sulphuric acid, sp. gr. 1·843, and then 2½ fluid-

ounces nitric acid, 1·42; place the retort in the water-bath, connect with the well-cooled receiver; place the thermometer in the water-bath, and at the temperature of 175° F. distil over 12 fluidounces. Reduce now the water in the water-bath, with enough cold water, to the temperature of 60° or 65° F., and pour through the funnel into the retort ½ fluidounce more nitric acid, and resume the distillation till 15 fluidounces are in the receiver. This ether mix with 2 pints stronger alcohol.

Remove the copper wire from the retort, wash well, and keep it for the next operation.

The cost of the three pints of ether will be not over $1.77, and it answers all the tests of the Pharmacopœia.

For my part, I herewith tender to Prof. Redwood my obligation for his disinterested labor and genial character.—*Proc. Am. Pharm. Association*, 1867.

ON THE RELATIVE VALUE OF THE RHIZOMA AND RADICAL FIBRES OF PODOPHYLLUM PELTATUM IN THE MANUFACTURE OF PODOPHYLLIN.

By Wm. Saunders.

In commerce it is well known that samples of the rhizoma of *Podophyllum peltatum*, freed from the radical fibres, are preferred, and command a higher price; and also that the presence of an unusually large proportion of fibres is regarded as an evidence of inferiority. This preference may, in some cases, originate from the fact that the fibres are often associated with a considerable quantity of dust and other foreign matter, but however clean they may be made, the prejudice still exists in their disfavor.

To determine how far this objection is grounded on any deficiency of strength in the fibres as compared with the rhizoma, the following experiments were tried:

Eight ounces of the rhizoma, carefully freed from fibres, were ground in a Swift's drug mill sufficiently fine to pass through a sieve of twenty-five meshes to the inch. Eight ounces of root fibres, free from rhizoma, were treated in a similar manner. These were each moistened with four ounces of alcohol, and packed in separate percolators. After macerating for twenty-

four hours, fresh alcohol was added in small quantities at a time, until twenty ounces had passed through each, when the material was found to be exhausted.

The tinctures were evaporated to the consistence of syrup, and precipitation effected with water alone, according to the United States Pharmacopœia, when the precipitates were carefully collected and dried. From the rhizoma the yield was one hundred and thirty-seven grains, and from the radical fibres one hundred and thirty-seven and a half grains,—showing that there is no reason for regarding samples of root containing a large amount of fibres as in any way inferior, provided they have been carefully cleaned.—*Proc. Am. Pharm. Association*, 1867.

BITARTRATE OF POTASH, TARTRATE OF POTASH AND SODA, AND TARTARIC ACID, FROM CATAWBA WINE.

By E. S. Wayne.

These specimens are prepared from the crude tartar deposited by Catawba wine (a specimen of which is herewith sent). It is a well known fact that Catawba wine deposits as much tartar as European wines, and from the large quantity now produced annually, a large portion of the cream of tartar consumed in the United States might be produced, if the wine-growers would take the trouble to collect it. A large portion of it they throw away in the washing or cleaning of the wine casks, and others refuse to remove it, under the impression that it is beneficial to the wine to let the accumulation remain. I have been endeavoring for some time past to encourage the saving of it, and have made the specimens sent for the purpose of showing to the wine-growers here what can be done with it, and to interest them in saving all that they may make; and hope at the next meeting of the Association to report a favorable progress.

The cream of tartar specimen is crystalline, not powdered. It was made after the following manner: The crude tartar was placed in a vessel, and water added, less than sufficient to dissolve it. It was then heated, and carbonate of soda added until the acid was neutralized and the double tartrate of potash and soda formed; the solution then filtered, and the coloring matter removed by percolation through animal charcoal.

A portion of this was then evaporated to a crystallizing point, set aside, and produced the sal Rochelle.

The mother liquor from the above, with the other portion of the liquor, was then used for obtaining the cream of tartar and tartaric acid.

To a portion of it hydrochloric acid was added, which caused a precipitate of bitartrate of potash, as a crystalline powder. This was drained on a filter, and then washed with distilled water and dried.

The tartaric acid was made by precipitating tartrate of lime, by solution of chloride of calcium, from the other portion of the original liquor (solution of sal Rochelle), the resulting tartrate of lime washed, and then decomposed by sulphuric acid, the sulphate of lime separated by filtration, and the solution of tartaric acid evaporated to a certain point, so as to deposit any dissolved tartrate of lime, then filtered, and again evaporated and crystallized.

Cincinnati, Aug. 29th, 1867.

—*Proc. Am. Pharm. Association,* 1867.

QUICKSILVER IN NORTH CAROLINA.

By E. S. Wayne.

The specimen of quicksilver ore was handed to me for examination by J. S. Bonham, of Concord, Tenn. The locality in which it is found is in Macon county, Tenn., near the dividing ridge that separates the waters flowing into the Atlantic and Gulf of Mexico, and forty miles from Wall Hollow, S. C., and thirty miles from the line of railroad from Cincinnati to South Carolina. The specimen is a talcose rock, containing quicksilver in the metallic state. From the description given to me, there is an immense vein of the material. By analysis I found that it yielded 7½ per cent. quicksilver (150 pounds to the ton). From the appearance of the specimen when handed to me, and the statement made by the party that it contained quicksilver, I thought that it was merely a conjecture upon his part, but analysis proved the correctness of the statement, both by wet and dry assay. A portion of the ore, placed in a glass tube and heated,

will quickly show condensed globules of mercury, and all that would be required to separate the metal from gangue, is simply retorting it.—*Proc. Am. Pharm. Association*, 1867.

AMERICAN OPIUM.

By E. S. Wayne.

The specimen herewith sent was obtained from the white poppy by Dr. H. Black, of Bolivar, Tenn., who for several years past has turned his attention to the culture of the same, and the collection of opium from it. The specimen is of this year's growth. The quantity made by him this year was but small, ill health preventing his attending to it. He says that, in collecting it, he incises the capsule with a shallow cutting instrument, that merely cuts through the outer skin, for should it be cut completely through, the opium falls into the cavity of it, and is lost. The incisions are made early in the morning, and the accumulated opium scraped in the evening. I have tested the opium as to its morphia value by Dr. Riegel's method, a modification of Guillermond's. The obtained morphia was washed with water to remove adhering meconate of ammonia, and with ether to remove narcotin. The yield of morphia by this process I found to be 10·2 per cent. The morphia in the box with specimen is the yield; it has been re-crystallized.—*Proc. American Pharm. Association*, 1867.

ON THE USE OF OXALATE OF IRON IN MEDICINE.

By G. G. C. Simms.

It occurred to me, after having decided to attend this meeting, that I might present something here worthy the notice of this learned body. I was aware that a chemical, in daily use in the District of Columbia, and with which the pharmaceutists and physicians of Washington are as familiar as with any other article of the Materia Medica, was not to be found in any of our text books or treatises on chemistry or medicine.

I had thought that, in presenting here a sample of Oxalate of Iron, I would be introducing something new to the profession, as well as something which would redound to the credit of one of our able, but over-modest chemists.

I soon learned, though, that this article had already been brought to the notice of this Association some years ago, but for some reason, unknown to me, little or no notice was taken of it; and, a few months ago, an English pharmaceutist, it seems, claimed the honor of its discovery, and made known its valuable properties as a medicine.

I deem it, therefore, eminently proper that the claim of Dr. Schaeffer, for first using Oxalate of Iron and making known its invaluable medicinal properties, as well as other useful purposes to which it may be put, should be heard in this Association;

First, That it may be brought prominently before the profession, medical and chemical;

Secondly, That the question as to its paternity may be settled forever.

Having learned, several years ago, that Dr. Schaeffer, Professor of Chemistry in the "National Medical College of the District of Columbia," introduced the article under notice to his medical friends as possessing peculiar and very desirable properties in the treatment of disease, I addressed a note to him, requesting that he would give me a history of its introduction into medicine, its medical properties, &c., &c.

I desire, for the information of the members of this Association and for that of the medical profession at large, both of the Eastern and Western Hemispheres, to read Dr. Schaeffer's letter to me, in reply to my note. It will, I am sure, be found interesting to all who may read or hear it read.

I can safely say that Oxalate of Iron has been constantly used as a medicine in the District of Columbia during the last ten years.

Of its medical and chemical properties I will let Dr. Schaeffer speak. The formula for its preparation may be found in a little book, entitled "Non-officinal Formulæ in local use in the District of Columbia."

I would further observe, in addition to what the Doctor says, that pure glycerin seems to me to be the best vehicle in which to administer it.

Washington, D. C., Sept. 5th, 1867.

DEAR SIR:—In answer to your inquiry, I send the following

particulars in regard to the introduction of the Oxalate of Iron into medical practice. In the month of May, 1854, I had been using the "Pulvis ferri." I had found certain objections to it which I thought might be obviated by the use of a pure oxide of iron for reduction. In looking about for such a pure oxide, easily and cheaply prepared, I found no one answering all ends so well as that produced by the process of Vogel. This consisted in precipitating a solution of ordinary proto-sulphate of iron by oxalic acid. The filtered solutions exclude all insoluble matter, and the precipitated oxalate is nearly insoluble in the remaining free sulphuric acid. It needs but sufficient washing and subsequent drying to obtain the oxalate in a state of purity and of constant composition. This salt gently heated, with exposure to the air, takes fire, or may be kindled, and then continues to burn until the whole becomes converted into impalpable peroxide of iron. This cheap, rapid and perfect method of obtaining a perfect oxide of iron, free from all grit and eminently fitted for all the finer polishing purposes, had led to the use of this article for polishing the finest optical glasses in the most renowned European establishments. It may be remarked, by the way, that by heating the product to a higher temperature, a much harder substance may be obtained, useful rather for grinding than for polishing purposes. By adding salts of alumina, chromium and other similar salts to the iron solution, we may obtain in the final result—using sufficient heat—products nearly, if not quite, equal to emery, and of extraordinary fineness.

Having obtained the oxalate and examined its properties, it at once occurred to me that this salt itself would be an excellent form, by means of which, to introduce iron into the system. It was a proto-salt, unalterable, cheaply made and quite pure.

The soluble proto-salts of iron are too astringent and liable to rapid alteration. Even the less soluble salts undergo the change so quickly that they must be protected by some extraneous substance, intermixed or coating their preparations.

Struck with these obvious advantages, I commenced to use the salt myself. Being so very insoluble, I placed the dry powder upon the tongue and washed it down with water, and I believe that, in the extended use which has since been

made of it, this is still the favorite mode of administration. I soon found that, in doses of two to three grains thrice a day, all the tonic effects of iron were more rapidly produced upon the system, than by any ordinary dose of the iron preparation which I had used. It was quite easy, by increasing the quantity, to stimulate the capillary circulation to the extent of producing an itching over the whole surface of the body. Instead of being astringent, with inactivity of the bowels originating from want of tone, it soon produced healthy and natural passages. The prolonged use of this oxalate will, however, give rise to a peculiar kind of astringent action which should be taken into consideration.

Having thus satisfied myself that the Oxalate of Iron would prove a useful article of the Materia Medica, it was communicated to some of my medical friends, and ever since then it has been in constant use in this city.

Several years ago a gentleman of this place requested an account of this article to be read before the National Pharmaceutical Convention, meeting that year in Philadelphia. My friend, Dr. Craig, who had become interested in the matter, was asked by me to prepare this notice, which I did not wish to make myself. The paper, it seems, was never read, but the preparation excited some attention. In the March number of the American Journal of Pharmacy, for this year, there is an article, "Oxalate of Iron—a New Tonic," in which this same substance is noticed, as prepared in a far less economical and perfect way. A note by the editor gives credit to Dr. Craig for having "recommended it as far back as 1858."* This mistake has no doubt arisen from

* [In a note received by the Editor, dated September 5, 1867, referring to the foot note in this Journal, above alluded to, he says: "The only occasion on which I had the pleasure of meeting you, I took the means of calling your attention to a notice prepared by Dr. Craig of my introduction of this substance into the Materia Medica in the year 1854. I never could learn why the notice sent to the Annual Meeting in Philadelphia was not published. That I called your attention to it, as above mentioned, I am quite certain." Now, we do not doubt that Dr. Schaeffer states the facts, nor do we understand that he means to infer that the "notice" was placed in our hands, but certain it is, at this late date, we have no recollection whatever, either of the interview or of ever having

the facts stated above. As the article is now in common use here, and as its merits have been fully recognized by medical men, it seems but an act of justice that I, who first prepared, used, and introduced it to the notice of medical men, should have due credit given me. Since the first use of the Oxalate of Iron it has been ascertained that, in cases of excessive irritability, when ordinary preparations of iron could not be tolerated, the oxalate was taken with the greatest benefit.

The very beautiful color of the oxalate iron would at once suggest its use as a pigment. It does not seem capable of mixing well with gum and similar vehicles, making a somewhat curdy result, but such as it is I have a specimen which, for thirteen years, has kept quite unchanged. With oil it is so transparent as to be utterly useless.

From two analyses I have found that the salt, prepared as above described, is without water of crystallization. This is a question which canbe easily determined by experiments.* The powder is uniformly crystalline, and, from its unalterability, I consider it one of the best means of obtaining a given quantity of a proto-salt of iron for purposes of chemical analyses.

Respectfully yours,

GEO. O. SCHAEFFER.

To Mr. G. G. C. Simms.

Varieties.

A valuable Antiseptic.—If all that Mr. W. L. Scott claims for the bi-sulphite of lime be realized in practice, it is likely to be an agent of whose uses we may often avail ourselves in practice with advantage.

"Beef-tea or broth, in hospitals or otherwise, may be prevented from turning sour by stirring in a few drops of the bi-sulphite of lime solution

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seen the paper, and disclaim absolutely any intention of injustice to his rights as a discoverer of the therapeutic merits of the oxalate of iron. On the contrary, when the article of Mr. Reynolds was copied into the Journal, we asserted the claims of the only name we then knew in connection with the medical use of this salt at Washington, which, as the paper of Mr. Simms explains, was not the correct one.—EDITOR.]

* According to Gmelin (Handbook, vol. ix., p. 156, 1855) artificial oxalate of protoxide of iron contains 2 eq. of water for each eq. of base; whilst the native oxalate (Humboldtite) is only sesqui-hydric.—EDITOR.

to each pint of the soup; and the same plan will unable us to keep jellies, which ordinarily decompose so rapidly in the organic germ-laden air of the sick-room, for many days unimpaired; these are, in my opinion, considerations of some moment in all circumstances, but most especially in the habitations of the poor. Clothes or matting, soaked in the same solution and hung up, act as disinfectants of the most effective kind, and do not exhale the peculiarly unpleasant odor of carbolic acid, or the irritating vapors, so distressing to the bronchial system, of the chloride of lime. I have successfully employed the bi-sulphite of calcium for the preservation of numerous anatomical and other specimens, as it does its work perfectly, and without occasioning the great changes of color and contraction of muscular structure so frequently produced by ordinary antiseptics; moreover, its special advantage over the preparations of mercury and arsenic lies, in my thinking, in the fact that it is not poisonous, and can therefore be handled with perfect safety. For ointments, a fluid drachm to each pound is quite sufficient to preserve them, while it has no injurious action whatever, and is quite compatible with the great majority of ointments and oily preparations—a remark which does not apply to the alkaline sulphites and bi-sulphites which have, from time to time, been brought forward for similar purposes."—*Med. and Sur. Rep., Nov.* 16, 1867, *from Brit. Med. Journal.*

Mercurial Ointment as an Anthelmintic.—Dr. T. E. Broaddus, of St. Charles, La., (*New Orleans Med. and Surg. Jour.*) in 1861, prescribed 15 grains of blue mass for a robust patient, to be followed by castor oil. On his next visit he was surprised to find the medicine had produced an extraordinary evacuation of worms (lumbricoides). On querying as to the medicine taken, the patient said he had great difficulty in taking the mass and had to swallow it in lumps. On examination the doctor found that his patient had taken mercurial ointment, which readily accounted for the practical difficulty of making it into pills.

Subsequently, Dr. B., in unusual cases requiring a vermifuge, prescribed this mercurial in the form of an emulsion for lumbricoides and for tænia, followed by castor oil, with complete success.

Antidote for external Poisoning by Cyanide of Potassium.—The extensive use made of this virulent poison in electroplating and other arts, sometimes is the cause of painful and troublesome ulcers on the hands of the workmen. The Boston Journal of Chemistry contains a statement from the foreman of the gilding department of the American Watch Works, in which he says that experience has taught him that the most effectual remedy which can be employed in such cases is the proto-sulphate of iron in fine powder, rubbed up with raw linseed oil.

The Proposed International Coinage.—A specimen medal of the proposed international coin of twenty-five francs, recently struck by the

government of France, was presented this morning to the President, through Mr. Samuel B. Ruggles, delegate of the United States to the International Monetary Conference, and who has just returned from Paris.

The new coin is 24 millimetres in diameter, or very slightly larger than the present half eagle of the United States or the sovereign of Great Britain. It bears on its obverse the conjoint inscription, "Five dollars—twenty-five francs," and is a type of the proposed monentary union of the three nations If adopted by the governments of the United States and Great Britain, this international coinage, bearing the denominations and emblems of the respective nations, will circulate with perfect equality and without impediment throughout the world. The official report of Mr. Ruggles, fully embodying the facts needed for the careful consideration of the subject, will probably be sent to Congress during the present week.—*Phila. North American, Nov.* 27, 1867.

Atropine harmless to Rabbits.—Dr. Ogle, Lecturer on Physiology at St. George's Hospital, sums up a valuable paper, in which is included a large number of experiments, viz.:

1. That a rabbit of middle age can live for, at any rate, six days exclusively on belladonna without inconvenience.

2. That a rabbit can tolerate enormous doses of atropine administered either by the stomach or by subcutaneous injection, and that this tolerance is not due to non-absorption of the poison.

3. That this tolerance increases with the age of the rabbit.

4. That dilatation of the pupils is, however, produced just as readily, if not more so, in an old rabbit as it is in a young one.—*New York Med. Journal, Nov.*, 1867.

The Packing of Bottles, filled or empty, is now performed more safely, closely, and rapidly, than heretofore, by means of India-rubber rings slipped over them. The rings cost only once, and can remain on the bottle as long as it lasts.—*Bost. Jour. Chemistry, Dec.* 1867.

The new process of Preserving Human Flesh.—Not long ago I spoke of the lost secret for petrifying human flesh, of the persevering attempts made in Italy to rediscover it, and of the discovery, while making these researches, of another method of preserving flesh, perhaps quite as valuable as the last one. At the Great Exposition, Dr. Burnetti, of Padua, the finder of the new method, was honored with a gold medal, and with the true spirit of a man of science, he came forward the other evening at one of the meetings of the International Medical Congress, now in session at the School of Medicine of Paris, and divulged his secret. The great amphitheatre of the school was crowded with distinguished medical men from all parts of the world, and when the Italian *savant* had concluded his speech, he was rewarded with an ovation which must have been a full compensation for any losses he may suffer from having his

secret pass into the public domain. The following details are sufficient to enable any anatomist to avail himself of this important discovery.

The process of Dr. Burnetti, which he explained, comprises several operations, viz.: 1—the washing of the piece to be preserved; 2—the *degraissage*, or eating away of the fatty matter; 3—the tanning; 4—the desiccation.

1. To wash the piece, M. Burnetti passes a current of pure water through the blood-vessels and various excretory canals, and then he washes the water out by a current of alcohol.

2. For destroying the fat, he follows the alcohol with ether, which he pushes, of course, through the same blood-vessel and excretory ducts; this part of the operation lasts some hours. The ether penetrates the interstices of the flesh, and dissolves all the fat. The piece at this point of the process, may be preserved any length of time desired, plunged in ether, before proceeding to the final operation.

3. For the tanning process, M. Burnetti dissolves tannin in boiling distilled water, and then, after washing the ether out of the vessel with distilled water, he throws this solution in.

4. For the drying process, Dr. Burnetti places the pieces in a vase with a double bottom, filled with boiling water, and he fills the place of the preceding liquids with warm, dry air. By the aid of a reservoir, in which air is compressed to about two atmospheres, and which communicates by a stop-cock and a system of tubes, first to a vase containing chloride of calcium, then with another heated, then with the vessels and excretory ducts of the anatomical piece in course of preparation, he establishes a gaseous current which expels in a very little time all the fluids. The operation is now finished.

The piece remains supple, light, preserves its size, its normal relations, its solid histological elements, for there are no longer any fluids in it. It may be handled without fear, and will last indefinitely. The discovery is a magnificent one, and the sooner medical schools are provided with full cabinets of natural and pathological pieces, the better.—*St. Louis Med. Rep., Nov.* 1, 1867, *from N. Y. Times.*

Colorless Varnish with Copal.—To prepare this varnish the copal must be picked; each piece is broken and a drop of rosemary oil poured on it. Those pieces which, on contact with the oil, become soft, are the ones used. The pieces being selected, they are ground and passed through a sieve, being reduced to a fine powder. It is then placed in a glass, and a corresponding volume of rosemary oil poured over it; the mixture is then stirred for a few minutes until it is transformed into a thick liquor. It is then left to rest for two hours, when a few drops of rectified alcohol is added and intimately mixed. Repeat the operation until the varnish is of a sufficient consistency; leave to rest for a few days, and decant the clear. This varnish can be applied to wood and metals.—*Jour. Applied. Chem.*

Minutes of the Philadelphia College of Pharmacy.

A special meeting of the Philadelphia College of Pharmacy was held at the College Hall on the evening of the 10th of December, pursuant to a request from the Board of Trustees, and the issuing of the accustomed notice.

The President of the College, Charles Ellis, in the chair; twenty members present. The object of the meeting was announced by the Chair to be the consideration of the subject of a new location for the College building.

The resolutions referred to a Committee by the College at its last semi-annual meeting in September were read, accepted, and the Committee discharged.

The following report from a Committee appointed by the Board of Trustees was read:

"The Committee of the Board of Trustees, appointed to view the lot of ground, &c., in the vicinity of Tenth and Cherry streets. the property of Samuel Bettle, offered for sale to the College as per diagram drawn by Charles Richardson, real estate broker, being directed to report to a special meeting of the College, to be held the 10th inst., respectfully report—

"That they have examined the premises, and recommend the purchase by the College of the dwelling house No. 145 North Tenth St., together with the burial-ground lot, excepting so much of the latter as is included between its northern boundary and a line drawn at right angles to Tenth street across the lot, 17 feet 6 inches south of the said northern boundary.

"They have prepared the following resolutions for the action of the College, and recommend their adoption:

"*Resolved*, 1*st*. That the Philadelphia College of Pharmacy agrees to purchase from Samuel Bettle the three-story brick dwelling house and lot No. 145 North Tenth street, with a portion of the vacant lot lying back of Tenth and Cherry streets; the whole premises agreed to be purchased being described as follows: Commencing at Tenth street, at the N. W. corner of the lot No. 145 North Tenth street, extending eastwardly on a line at right angles to said street 132 feet, to a point; thence south, on a line parallel to Tenth street, 72 feet 6 inches; thence west, on a line parallel to Cherry street, 43 feet, and including a certain alley way leading to Cherry street, 6 feet 7½ inches in width; thence north, at right angles, 5 feet to a point; thence west, on a line parallel to Cherry street, 43 feet; thence north, on a line parallel to Tenth street, 50 feet, thence west, at right angles, 46 feet to Tenth street; thence north, along said street, 17 feet 6 inches, to the place of beginning;—on ground rent, at an annual rent charge of six hundred and thirty-nine dollars ($639), to issue out of and be secured on the said premises in the usual manner, and

further secured by a policy of insurance on the buildings to be erected thereon by this College.

"*Resolved*, 2*d*. That the President, Secretary and Treasurer are hereby authorized, directed, and empowered, on behalf of the College, to make the necessary agreements with the parties concerned, and to sign and execute the necessary papers, in order to carry into effect the preceding resolution, and to use the corporate seal of the College therefor.

"And it is further *Resolved*, 3*d*. That the Secretary be directed to certify under his signature, to the parties concerned, that, at a special meeting of the Philadelphia College of Pharmacy, duly called, and held, after due notice, Dec. 10th, 1867, for the purpose of acting upon a proposition to buy a new location for the College building, there being present a full quorum of members, the preceding resolutions were duly moved, seconded and adopted; and to furnish a copy thereof to Samuel Bettle, in lieu of an agreement, until the title can be transferred.

AMBROSE SMITH,
EDWARD PARRISH,
JAMES T. SHINN,
Committee."

Philada., 12th mo. 10, 1867.

The resolutions were read by sections, considered, and adopted.

On motion, Ambrose Smith, Edward Parrish and James T. Shinn were appointed to effect the purchase of the property, under the resolutions.

The report from the Committee appointed by the College at its semi-annual meeting was again taken up, and read, as follows:

"*Whereas*, The Board of Trustees of this College have had under consideration the subject of increased accommodations for the School of Pharmacy, and at the annual meeting of the College, held in March last, a Committee was appointed to co-operate with the Board of Trustees, with the view of effecting such increased accommodations; and

"*Whereas*, The said joint Committee did not feel themselves authorized to purchase a new site for the College, without special instructions to that effect from the College,—this College, taking into consideration the importance, now amounting to almost a necessity for such action, do

"*Resolve*, 1*st*. That a Committee be appointed by the College to consider the ways and means whereby a new building for the accommodation of the College can be had.

"2*d*. That the Committee be empowered to solicit donations to a fund, to be called the 'building fund.'

"3*d*. That the Committee be also empowered to ascertain what amount can be obtained on a loan, secured by the issue of scrip by this College, for a period of ten years; said scrip to have coupons attached for the interest, payable semi-annually.

"4*th*. The Committee are hereby authorized and empowered by this College to proceed in the erection of a building for the accommodation of the College, whenever funds arising from the sale of the present College

lot and building, and issue of scrip for an amount not exteeding five thousand dollars, will enable them to effect such purpose.

"*5th.* That the Committee hereby appointed be empowered to sell the present College premises, at public or private sale; and the proper officers of the College are hereby directed to make a good and proper title to, and conveyance of said premises to the purchaser, under the corporate seal of the College.

"*6th.* The proper officers of the College are hereby empowered and directed to issue scrip, if in their judgment necessary, for an amount not exceeding five thousand dollars, pledging the property of the College for the payment of the principal of said loan at maturity, and the interest semi-annually.

"*7th.* The sale and delivery of the present College premises shall not be effected until proper accommodations for the College be secured, so as not to interfere with the usual course of instruction of the School of Pharmacy.

"*8th.* That the present College and building shall not be sold for a less sum than * * * dollars."

The resolutions were then read, considered, and adopted.

On motion, the Chair was directed to appoint a Committee to carry into effect the resolutions; said Committee to appoint its own Chairman, five of its members to constitute a quorum, and to keep a record of its proceedings, and report the same to the College.

To this service the Chair appointed

Prof. Robt. Bridges, M.D.,	T. Morris Perot,	John C. Allen,
Chas. Bullock,	Wm. J. Jenks,	Wm. C. Bakes,
Wm. Procter, Jr.,	A. B. Taylor,	Ambrose Smith,
Prof. Edward Parrish,	Chas. Shivers,	Thos. S. Wiegand,
James T. Shinn,	Dillwyn Parrish,	Prof. John M. Maisch.

On motion, the President, Charles Ellis, was added to the Committee.

On motion, then adjourned.

CHARLES BULLOCK, *Secretary.*

Editorial Department.

MASSACHUSETTS COLLEGE OF PHARMACY.—It was with great pleasure that we received the announcement that "the Massachusetts College of Pharmacy proposed to inaugurate a course of lectures on chemistry, materia medica, botany and pharmacy, and to offer the apothecaries of New England an opportunity, so long desired, to improve and perfect themselves in their profession." The following letter from Prof. Markoe enables us to say that our Boston friends have made a most excellent beginning, and will we doubt not continue to do well. They have our cordial sympathy and encouragement to persevere.

BOSTON, DEC. 14th, 1867.

Dear Sir,—I have the pleasure to inform you that we have been successful in forming a School of Pharmacy, under the authority of the Massachusetts College of Pharmacy. Some three or four months ago the Trustees appointed a "Lecture Committee," with full power to organize a School of Pharmacy.

The Committee consisted of Thomas Hollis, H. W. Lincoln, and the writer; and, after a very considerable amount of labor, we reported that we were sure of starting with a class of twenty five. The Trustees approved the work of the Committee, and appointed the following named gentlemen lecturers:

C. M. Tracy, Lecturer on Materia Medica and Botany;

E. L. Stoddard (instructer in the laboratory of the Massachusetts Institute of Technology), Lecturer on Chemistry;

G. F. H. Markoe, Lecturer on the Theory and Practice of Pharmacy.

The opening lecture was delivered by S. M. Colcord, on Wednesday evening, Dec. 11th, before a full house, in which nearly every pharmaceutical establishment in this city and vicinity was represented; ladies were also present. Mr. Colcord's address was able, eloquent, and especially practical; it occupied one hour in its delivery. Thos. Hollis, President of the College, presided, and made a brief address before introducing the lecturer. On Friday evening, Dec. 13th, the regular lectures for instruction began, E. H. Clarke, M. D., Professor of Materia Medica in Harvard University, opening the Materia Medica course with a very instructive and interesting lecture, in which he clearly defined the duties of the pharmaceutist, as to the kind and extent of his studies. I followed Prof. Clarke, with the introductory lecture of the Pharmacy course. We have succeeded far better than we anticipated, and have a class that already numbers thirty-six students, which will do very well for a beginning.

Very truly yours, GEO. F. H. MARKOE.

MAINE PHARMACEUTICAL ASSOCIATION.—In July last, this new member of the Pharmaceutical Associations of the United States, entered into existence at a meeting called by Dr. Cummings, of Portland, for the 23d of that month. The officers elected were, for *President*, Henry T. Cummings, M. D., of Portland; for *Vice President*, John G. Cook, of Lewistown; for *Recording Secretary*, Charles K. Partridge, of Augusta; for *Corresponding Secretary*, Aug. G. Schlotterbeck; *Treasurer*, M. S. Whittier; *Executive Committee*, H. T. Cummings, H. H. Hay and J. H. J. Thayer, all of Portland.

This is a good beginning. The territory of Maine is nearly as large as that of all the other New England States, and it is too far from Boston to enable Pharmaceutists to affiliate thoroughly with the Massachusetts College. The more local associations the better; all cannot have nor

need not have Schools of Pharmacy, but association yields direct fruits to the members, encourages literature by forming libraries, gives protection by united action and, above all, cultivates fraternal intercourse among business men by which the asperities of competition are softened.

St. Louis College of Pharmacy.—The following letter states the result of the annual election of this body.

St. Louis, Nov. 5, 1867.

Editor Journal of Pharmacy.

Sir :—At the regular annual meeting of the St. Louis College of Pharmacy, held Oct. 14th, 1867, the following persons were elected officers for the ensuing year :—

President—F. Sennewald.
1*st Vice President*—Theodore Kalb.
2*d Vice President*—Maurice W. Alexander.
Recording Secretary—Edmund T. Walsh.
Corresponding Secretary—Hubert Primm.
Treasurer—Charles L. Lips, M. D.

Respectfully,

Hubert Primm,
Corresponding Secretary.

The Philadelphia College of Pharmacy.—Our readers, by reference to page 85, will observe that measures are being taken to erect a new and more commodious hall for the accommodation of our College and its growing School of Pharmacy. When, after years of occupation of rented premises, through the efforts of a few earnest workers in the College, headed by the late Henry Troth, the present Hall was reared in 1832, few expected to see the day when the Institution would outgrow its capacity ; but so it is now. Not only are the two lecture rooms too small to seat the class comfortably, but the meeting room has ceased to afford space for the growing museum and library. Under these circumstances, the idea of a new hall has for several years forced itself on the Board of Trustees, until during the present winter it has resulted in the purchase of a lot of ample dimensions for the purpose in view, in a central location. It is intended to proceed, as soon as the season opens, to erect the Hall. Meanwhile, the Committee to whom the subject has been committed will proceed, according to the resolutions above referred to, to raise the funds by the sale of the present premises, by the creation of a limited loan and the issue of scrip, and by donations from the members and such others as may feel interested in the progress of the Institution.

The appeal, it is to be hoped, will be kindly met and earnestly answered. Every alumnus of the College, no matter where located, who, having succeeded in business, feels a warm side towards his *alma mater*, has an opportunity now to infuse new life in her veins by a timely contribution to the building fund, and aid those of us who, being on the spot, will have

to both work and contribute. No more disinterested and purely scientific corporation exists among us, whose aims are solely to benefit the community by enlightening and educating the coming generation of pharmaceutists, without, so far, the smallest return to the members in any other shape but that of satisfaction for well-doing, and the assurance of giving the community better service in the responsible business of dispensing medicines. Should the views now entertained of the project be carried out, it is believed that ample accommodation will be furnished for a library and reading room, where members may resort weekly or daily, a hall for general meetings of ample size, a museum, two large lecture rooms, and, over all, a commodious, well lighted and ventilated room for a practical school of chemistry and pharmacy, where analytical and industrial chemistry may be thoroughly taught,—affording the first instance in this country of this form of tuition, so well illustrated in London, and at Zurich and other continental establishments. To the pharmaceutist this will give a finishing touch to his home opportunities, or, where such are few, will substitute them; but to the student with wholesale druggists and chemists it will open out a self-aiding power that will be of the first importance to his business success in the fabrication of products.

Proceedings of the American Pharmaceutical Association at its Fifteenth Annual Meeting, held in New York Sept. 11th, 1867; also the Constitution and Roll of Members. Philadelphia, 1867; pp. 453, octavo.

We congratulate the Executive Committee, and especially the Permanent Secretary, for their success in getting out the volume within the year, and especially with its improved appearance and greater size. For the quality of the essays the reader is referred to many samples in this number, which speak well for the efforts of the members. But the strength of the work will be seen in the more detailed phonographic report of the discussions, and the ample report on the Progress of Pharmacy. We trust the Committee will be favored to effect the distribution of the volume as speedily as possible.

Congres Général des Pharmaciens de France et de l'Etranger tenu les 4, 5, et 6 Juillet, 1867, au Conservatoire des Arts et Métiers, a Paris. Compt. Rendus, Paris chez Asselin, Librarie-editeur, Place Ecole de médecin, 1867, pp. 233, octavo.

Our readers are, perhaps, not generally aware that, beside the two Pharmaceutical Conventions held in Paris in August, noticed in our last, a much larger gathering convened in the same city on the fourth of July previously, at the Conservatoire des Arts et Métiers, of which the above volume is the published proceedings. The Assembly was duly authorized by the Minister of the Interior, and permission obtained to meet in the noted Museum at the Conservatoire. 656 pharmaciens were present, of whom 317 were from Paris, 327 from the departments of France, and

12 foreigners, who represented the United States, Spain, Turkey, England, Prussia, Switzerland and Belgium. The officers of the "Société de Prévoyance" of the pharmaciens, of the department of the Seine, of which M. Amédée Vée is President, formed the temporary organization. After much discussion and two ballots M. Fumouze was declared President; next, six Vice-Presidents and six Secretaries were elected; and, at the suggestion of M. Vée, afterwards, nine "Assessors" were elected from among the foreign members, including Dr. Jenkins, of Louisville, (who was in attendance), as representing the United States.

The subsequent sessions were occupied in discussing the reports on the questions of the day, which had been prepared beforehand. The first was, "Is the legislation which regulates the exercise of Pharmacy in France in harmony with the customs, the economical institutions of the country, and the exigencies of the Profession?" The resolution of the reporters in reply was that "The General Congress of French and Foreign Pharmaciens think that the laws and ordinances which govern Pharmacy in France ought to be revised in the sense of absolute liberty, without any restrictions, under the guarantee of the diploma and the civil responsibility of the pharmacien."

We have not space now to expose the views which obtained in this large and democratic body of pharmaciens, but will merely state that in the main they represent the liberal views of the "Société de Prévoyance" of Paris, as regards the freedom of Pharmacy from undue legal restraint and interference, believing that education, represented by the diploma and the common law, is sufficient to regulate Pharmacy, and guarantee the protection of the public. In this they are diametrically opposed to the Society of Pharmacy, and the other two Congresses, whose action aims to make Pharmacy as much a profession as medicine, to abolish all specialties, to prevent all advertisements of medicines, and some of the members go so far as to advocate no public display—keeping shop in a back room or in the second story, with the simple sign on the door of "A B, Pharmacien." All this does very well for old-established houses, but parallel with it must go gray-haired clerks, too poor to marry and hopeless of advancement, the business conducted by proxies, and, without the stimulus of competition, relapsing into a vegetative, red-tape, almost fossilized condition.

Proceedings of the British Pharmaceutical Conference. Dundee Meeting, 1867; pp. 48, octavo.

We are in receipt of this volume by mail, from the Secretary, Dr. Attfield. The English custom of publishing the proceedings in advance of the official volume enabled us to print a selection from the articles in November and several others in this number; and our friend Ebert's letter enlightened our readers in regard to the transactions at Dundee. The amount of matter produced is less this year than last, a result prob-

ably due to the fewer members in attendance at so uncentral a point as Dundee. Our own experience is very much the same in regard to the size of the annual volumes. No one can doubt that the Conference is exerting an ameliorating influence on British pharmaceutists and pharmacy, and it is believed that this influence will go on increasing. One thing about the arrangements has appeared to us worthy of change, and that is making the place of meeting subject to the decision of the British Association of Science. Now, it is difficult to serve two masters; we are all acquainted with the reasons. If the more scientific members of the Conference are thus drawn towards it nominally, whilst they are really attracted by the larger body, it may serve a purpose, but may not do as much good as to locate the meetings strictly in view of their influence in advancing purely pharmaceutical interests. The sooner all the able men, as well as the men of respectable pharmaceutical ability in Great Britain, among the chemists and druggists, can be brought into the ranks with the pharmaceutical chemists the better, and this way of meeting on a common ground is certainly the best means of effecting the desired fusion.

Calender of the Pharmaceutical Society of Great Britain, (founded 1841, incorporated finally 1852). London, printed for the Society. 1866; pp. 77, oct.

It has been usual with the Society to print, with the July number of the Pharmaceutical Journal, a list of the members. In lieu of this, the Council have decided to gather together, in pamphlet form, a list of the official documents, by-laws, etc., that are scattered through the Journal, and to refer to which many volumes have to be consulted. Besides these, a large amount of information relating to the School of Pharmacy, the examinations, the benevolent fund, the library, laboratory, etc., which to the members will be of very great utility. Among other matters is a chapter entitled "Hints to Students preparing to pass the examination of the Pharmaceutical Society." In an appendix is a compend of all the acts of Parliament bearing on and important to druggists and pharmaceutists, especially those relating to revenue laws and poisons, which will be a great help. Something of this kind might be issued by our College with great propriety, and by including the revenue and other enactments, with the special matters of the College, would be doing the members good service.

A Catalogue of the Officers and Students of the Harvard University for the Academical Year 1867–68*; first term.* Cambridge: Sever & Francis, 1867; pp. 103, 18mo.

This is more than a catalogue, embracing much information in reference to the several faculties and branches of this extensive institution, useful to those desiring to enter or wishing to understand the working of

the several departments. The united libraries amount to 176,000 volumes, and the students, of all grades, 1020. These are distributed in the regular Collegiate School, the Divinity School, the Law School, the Lawrence Scientific School, and the Medical School.

Address of George Bentham, Esq., F R S., President; together with the Obituary Notices of Deceased Members; by George Busk, Esq., Secretary; read at the Anniversary Meeting of the Linnean Society, on Friday, May 14, 1867. Printed at the request of the Fellows. London, 1867; pp. 32, octavo.

For this interesting address of Mr. Bentham we are indebted to our friend Daniel Hanbury, F.L.S., &c., London. After a few words on the affairs of the Linnean Society, the address goes into a very lucid and impartial account of the strictly scientific publications of the United States from Colonial times to the present, commencing with the transactions of the American Philosophical Society, and ending with the Smithsonian Institution and its publications, the operations of which are dwelt upon at some length approvingly, especially the system of international exchanges.

An Introduction to Pharmaceutical Chemistry. By John Attfield, Ph. D., F.C.S., Professor of Practical Chemistry to the Pharmaceutical Society of Great Britain. London: John Van Voorst, 1867; pp. 447, 12mo.

The receipt of this volume from the author, by mail, is hereby acknowledged. Though too late for notice in this number, we hope to have a notice of it in our March issue. The work has been carefully prepared by Dr. Attfield for chemical and pharmaceutical students.

Proceedings of the British Pharmaceutical Conference. Nottingham Meeting, 1866; pp. 111, octavo.

Exhibition of Objects relating to Pharmacy, held at Nottingham, August 1866, during the meeting of the Pharmaceutical Conference; pp. 24 octavo.

These pamphlets, forwarded to us by the Secretary of the Conference last year, did not reach us until a few weeks ago, owing to some mismanagement in the medium adopted. As, however, they mainly appeared in the Pharmaceutical Journal, many of the papers were copied and the meeting referred to in due course in our pages.

The Physician's Hand-Book for 1868. By William Elmer, M. D. New York: W. A. Townsend & Adams, publishers, 1868.

This Annual now makes its eleventh appearance, and has been almost re-written. The preface claims it as a new work. It contains 113 pages of letter press, and is addressed both to regular physicians and eclectics,

if we may judge by the list of medicines. It is a companion to the practitioner and a great aid to the physician in his daily rounds in emergencies, as well as affording a regular daily record.

East India (*Chinchona Plant*). Return to an address of the Honorable the House of Commons, dated 14th May, 1866, for "Copy of further Correspondence relating to the Introduction of the Chinchona Plant into *India*, and to Proceedings connected with its Cultivation from April, 1863, to April, 1866." India Office, June, 1866. Printed by order of the House of Commons, June 18, 1866. Folio, pp. 377.

We are indebted to Mr. Daniel Hanbury, F. R. S., of London, for this valuable exposé of the progress of the cinchona culture in India, illustrated by maps and wood engravings, and hope to make some extracts from it for the benefit of our readers.

OBITUARY.

George Getz Shumard, M.D.—Dr. Geo. G. Shumard was born at Burlington, N. J., in 1825, but while still a child removed to Cincinnati, where his boyhood and early manhood were spent. Having completed his academic course at Woodward College, he commenced the study of medicine, attended one course of lectures at the Medical College of Ohio, and graduated at the University of Louisville in 1847. He first located at Albion, Ill., and later at Fort Smith, Ark., where he had his home until the breaking out of the war. A scientific and practical geologist, he made a number of private explorations, and accompanied the Red River Exploring Expedition, commanded by Captain, now Brigadier General, R. B. Marcy, U S.A., and the "Artesian Well Expedition," commanded by Captain, now Major General, John Pope, U.S.A. Still later, Dr. Shumard was State Geologist of Texas. His various scientific reports, made from time to time, are well known, and the profession will remember his discovery of an American substitute for gum arabic—*mesquite* gum.—*Cincinnati Lancet*, Nov., 1867.

Catalogue of the Class of the Philadelphia College of Pharmacy,

FOR THE FORTY-SEVENTH SESSION, 1867-68.

With a List of their Preceptors and Localities.

MATRICULANTS.	TOWN OR COUNTY.	STATE.	PRECEPTOR.
Ball, Ellwood,	Philadelphia,	Pennsylvania,	H. Gerhard.
Barton, G. W.	"	"	J. R. Angney, M.D.
Bates, Louis A.	Montgomery,	Alabama,	J. T. Hufnal.
Beck, John W.	Lancaster,	Ohio,	G. G Beck.
Bell, James S.	Albion,	Canada West,	E. Parrish.
Black, James D.	Philadelphia,	Pennsylvania,	A. B. Taylor.
Blake, Amos R.	"	"	Thomas Blake, M.D.
Bodine, James P.	Bordentown,	New Jersey,	A. Warren.

Boudinot, Elliot E.	Terre Haute,	Indiana,	James Gallagher.
Bowman, Henry K.	Philadelphia,	Pennsylvania,	B. F. Johnson.
Boyd, Abraham,	Licking Co.,	Ohio,	C. R. Keeney.
Boyle, John,	Philadelphia,	Pennsylvania,	C. Ellis, Son & Co.
Bradley, Thomas F.	"	"	Hazard & Smith.
Bronson, Eugene C.	Chicago,	Illinois,	Bennett L. Smedley.
Clark, A. B., Jr.	Galesburg,	"	J. P. Bolton.
Clothier, Samuel,	Philadelphia,	Pennsylvania,	Mellor & Rittenhouse.
Compton, Briscoe,	Fairmount,	West Virginia,	Hassard & Co.
Conner, Wm.		Pennsylvania,	W. W. Mullen.
Corbidge, J. E.	Chicago,	Illinois,	E. H. Sargeant.
Craven, James,	Philadelphia,	Pennsylvania,	Bullock & Crenshaw.
Crawford, Wm.	"	"	Crawford & Fobes.
Cullen, Gustavus,	Camden,	New Jersey,	T. F. Cullen, M.D.
Cummings, Joseph J.		Pennsylvania,	John Gegan, M.D.
Davis, Aaron R.	Allentown,	"	A. Hansell & Bro.
Day, Robert L.	Somerville,	"	Thomas R. Coombe.
Dehuff, John G.	Lebanon,	"	Charles Shivers.
Detwiller, H. J.	Friedensville.	"	John Reakirt & Co.
Dilks, Samuel L.	Philadelphia,	"	S. L. Dilks.
Dinning, H. H.	Buffalo,	New York,	Charles Shivers.
Dougherty, Wm.		Michigan,	G. W. Dougherty.
Eayre, Mortimer H.	Eayrestown,	New Jersey,	W. F. Simes & Son.
Ehler, Wm. R.	Lancaster,	Pennsylvania,	Wm. R. Ehler.
Elliott, Frederick G.	Philadelphia,	"	Wetherill & Bro.
England, Howard,	Wilmington,	Delaware,	L. M. England & Son.
Esterle, August,	Philadelphia,	Pennsylvania,	Gilbert & Royal.
Estlack, Horace W.	"	"	Amos H. Yarnall.
Eyster, C. E.	Chambersburg,	"	D. Milligan.
Farr, Wm. L.	Oxford,	Ohio,	Daniel S. Jones.
Foulke, James,	Quakertown,	Pennsylvania,	A. Tatem.
French, Howard B.	Philadelphia,	"	Wm. B. Webb.
French, John B.		Maryland,	Hassard & Co.
Fritchey, James G.	Lancaster,	Pennsylvania,	E. B. Garrigues.
Fronheiser, J. J.	Johnstown,	"	E. Herwig.
Gerhard, A. F.	Philadelphia,	"	E. Gaillard.
Germon, Wm. D.	"	"	Wetherill & Bro.
Good, James M	"	"	B. N. Bethel & Co.
Grebe, Wm. H.		Delaware,	Wm. M. Reilly.
Hannaman, J.	Philadelphia,	Pennsylvania,	R. Keys, M.D.
Hand, Charles,	Burlington,	New Jersey,	Wm. R. Warner & Co.
Harper, Warren,	Dover,	Delaware,	H. C. Blair & Sons.
Harrop, Joseph,	Galliopolis,	Ohio,	E. Parrish.
Hecker, Jacob K.	Lebanon,	Pennsylvania,	Wm. B. Webb.
Herbert, Eugene,	Philadelphia,	"	French, Richards & Co.
Hoagland, P. R.	Chicago,	Illinois,	B. N. Bethel & Co.
Holstein, Charles E.		Pennsylvania,	Lancaster & Wills.
Hunter, Thomas,	Philadelphia,	"	R. Keys, M.D.
Husband, Thomas J., Jr.	"	"	Thos. J. Husband.
Hutchison, Hamilton,	"	"	J. T. Shinn.
Ingalls, A. O.	Waukegan,	Illinois,	W.S. Pearce.
Ingraham, F.		New York,	H. Walsh.
Isard, George W.	Philadelphia,	Pennsylvania,	W. Gibson, M.D.
Jones, D. Augustus,	Mount Holly,	New Jersey,	W. Notson, M.D.
Jorden, Henry A.		"	Wm. H. Hickman.
Kærcross, Edward,	Philadelphia,	Pennsylvania,	Alfred Joes.
Karch, Joseph J.	Lebanon,	"	C. W. Hancock.
Kay, Samuel D.	Haddonfield,	New Jersey,	T. N. Penrose.
Kelty, Clement,	Salem,	"	A. W. Wright, M.D.
Kerr, James,	Pittsburg,	Pennsylvania,	J. C. Mattern.
Kirkbride, Joseph J.	Philadelphia,	"	J. J. Kirkbride.
Kline, M. N.	"	"	Smith & Shoemaker.
Klump, Charles C.	Allentown,	"	Gustavus Radefield.
Kolp, C. Henry,	Philadelphia,	"	
Kraft, Norman A.	"	"	C. Ellis, Son & Co.
Krewson, Wm. E.	Abington,	"	Thos. Gordon, M.D.
Lamparter, Eugene,	Neutlingen,	Germany,	F. Pleibel, M.D.
Levering, George W.	Philadelphia,	Pennsylvania,	Charles E. Davis.
Lillard, Benjamin,	Nashville,	Tennessee.	Powers & Weightman.
Livezey J. Dilworth,	Philadelphia,	Pennsylvania,	A. Livezey, M.D.
Louchlin, Dennis J.	"	"	D. Jameson, Jr.
Lunney, George,	"	"	J. M. Thomas.

MacBride, Wm. V.	Philadelphia,	Pennsylvania,	G. W. Vaughan.
Marshall, Alfred S.	"	New Jersey,	Lancaster Thomas.
Marshall, R. T.	"	Pennsylvania,	W. F. Simes & Son.
Mattern, Wm. K.	"	"	S. Rosenberger, M.D.
Matthews, Charles C.	Shippensburg,	"	George Ross.
Moore, Orlando L.		Wisconsin,	Hassard & Co.
Neergaard, Wm.	New York,	New York,	J. M. Maisch.
Newbourg, C. F.		Long Island,	C. F. Newbourg.
Nock, Wm. B.	Camden,	Delaware,	S. C. Allaband, M.D.
O'Brien, F. Bryan,	Philadelphia,	Pennsylvania,	F. B. O'Brien.
Ottinger, Franklin,	Mount Holly,	New Jersey,	James N. Marks.
Ottinger, J. J.	"	"	O. S. Hubbell.
Parrish, Clemmons,	Philadelphia,	Pennsylvania,	E. Parrish.
Peck, Aulay,	"	"	Peck & Co.
Penrose, Stephen F.	Quakertown,	"	S. Birdsell, M.D.
Pfromm, Adam,	Philadelphia,	"	A. Wiltberger.
Phelps, Frederick H.	Jackson,	California,	James Kenworthy.
Plank, Winifield S.	Churchtown,	Pennsylvania,	T. H. Smart.
Price, Ferris,	Philadelphia,	"	C. Ellis, Son & Co.
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Raser, Wm. H.	Reading,	"	J. W. Dallam & Co.
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Reifsynder, Evans F.	Philadelphia,	Pennsylvania,	Beates & Miller.
Reynolds, John J.	Chambersburg,	"	J. T. Shinn.
Richards, U. F.	Camden,	New Jersey,	French, Richards & Co.
Ridgway, Wm. T.	Mount Holly,	"	Wyeth & Bro.
Roberts, Charles E.	Philadelphia,	Pennsylvania,	Hance, Griffith & Co.
Robertson, Henry,	"	"	F. Brown.
Robinson, James S.	"	"	A. B. Taylor.
Schall, Alexander,	Norristown,	"	Gilbert & Royal.
Schellinger, C. M.	Cape Island,	New Jersey,	A. M. McCrea.
Seybert, Robert L.	Philadelphia,	Pennsylvania,	C. Janvier.
Sharp, Robert C.	Penningtonville,	"	H. C. Blair & Sons.
Shaw, Joseph B.	Cape Island,	New Jersey,	W. F. Simes & Son.
Shoffner, John N.	Norristown,	Pennsylvania,	Wm. Stahler.
Shropshire, Joseph B.	Mauricetown,	New Jersey,	A. C. Merritt.
Shryock, Allen K.,	Philadelphia,	Pennsylvania,	Wm. B. Thompson.
Shugard, B. F.	Montgomery Co.	Pennsylvania,	Jas. G. Wells.
Sill, Jesse,	McKeesport,	"	J. Sill.
Simes, Samuel F.	Philadelphia,	"	H. B. Lippincott.
Simon, Mathias,	La Crosse,	Wisconsin,	W. T. Wenzell.
Smith, Homer A.	Chicago,	Illinois,	R. C. Brodie.
Stackhouse, George P.	Philadelphia,	Pennsylvania,	F. Zerman.
Stein, Jacob,	Annville,	"	John Bley.
Sterling, E. B.	Watertown,	New York,	
Stern, Aaron,	Philadelphia,	Pennsylvania,	Smith & Shoemaker.
Stiefel, Louis,	"	"	Aschenback & Miller.
Stillwell, Walter C.	"	"	James L. Bispham.
Stolte, M. J.,	"	"	
Storks, L. Scott,	"	"	George C. Evans.
Supplee, J. L.	"	"	J. B. Moore.
Sweeney, R. E.	"	"	R. E. Sweeny.
Taylor, Harry B.	"	"	W. T. Taylor, M.D.
Taylor, W. G.		New Jersey,	R. T. Taylor, M.D.
Thomas, Frank W.	Dayton,	Ohio,	P. G. Oliver.
Thomas, John S.	Norristown,	Pennsylvania,	C. Ellis, Son & Co.
Tull, John,	Philadelphia,	"	C. Ellis, Son & Co.
Turner, Dudley H.	Towanda,	"	H. C. Porter, M.D.
Wallen, Jarvis R.		New Jersey,	George H. Davis.
Ware, Samuel,	Bridgeton,	"	Charles Cumming.
Webb, Wm. H.	Philadelphia,	Pennsylvania,	U. S. Laboratory.
Westerman, J. F.	"	"	G. C. Stees, M.D.
Williamson, Forrest F.	Delaware Co.,	"	A. H. Yarnall.
Williamson, L.	Philadelphia,	"	C. R. Keeney.
Wilson, Charles,	York,	"	Curran & Wilson.
Wilson, Edwin K.	Haddonfield,	New Jersey,	T. R. Coombe.
Wilson, Joseph T.	Schuylk'l Haven,	Pennsylvania,	C. E. Cady, M.D.
Wilson, Wm.	Parkesburg,	"	James H. Smith, M.D.
Wimer, Wm. C.	Philadelphia,	"	A. W. H. Hawkins.
Wolfe, Isaac G.	"	"	John S. Miller, M.D.
Wright, Samuel P.	Smyrna,	Delaware,	Wm. Procter, Jr.
Young, John,	Philadelphia,	Pennsylvania,	John DeLacy, M.D.